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SECOND ANNUAL REPORT

OF THE

PROPERTY OF
HAVEN EMERSON

METROPOLITAN

BOARD OF HEALTH

OF THE

STATE OF NEW YORK.

1867.

ALBANY:
PRINTING HOUSE OF CHARLES VAN BENTHUYSEN & SONS.
1868.

PROPERTY OF
HAVEN EMERSON

METROPOLITAN BOARD OF HEALTH.

COMMISSIONERS.

Sanitary Commissioners.

JAMES CRANE, M. D.,
WILLARD PARKER, M. D.,
JACKSON S. SCHULTZ,
JOHN O. STONE, M. D.,
JOHN SWINBURNE, M. D.

Police Commissioners.

THOMAS C. ACTON,
JOHN G. BERGEN,*
JOSEPH S. BOSWORTH,
BENJAMIN F. MANIERRE.

Secretary.

EMMONS CLARK.

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* Died, July 18th, 1867.

OFFICERS OF THE BOARD.

Sanitary Superintendent.

EDWARD B. DALTON, M. D.

Assistant Sanitary Superintendent.

JOHN T. CONKLING, M. D.

Sanitary Inspectors.

1.—JAMES R. BIRD, M. D.
2.—JAMES L. BROWN, M. D.
3.—FREDERICK H. COLTON, M. D.
4.—WILLARD F. DEMING, M. D.
5.—J. HAVEN EMERSON, M. D.
6.—SAMUEL N. FISK, M. D.
7.—SEYMOUR J. HOLLEY, M. D.
8.—EDWARD H. JANES, M. D.
9.—AUGUSTUS W. MACLAY, M. D.
10.—JAMES W. McLANE, M. D.
11.—MOREAU MORRIS, M. D.
12.—CHARLES W. PACKARD, M. D.
13.—HORATIO PAINE, M. D.
14.—WILLIAM H. THAYER, M. D.
15.—THOMAS H. WHITE, M. D.

Registrar of Vital Statistics and Corresponding Secretary.

ELISHA HARRIS, M. D.

Deputy Registrar of Vital Statistics.

R. CRESSON STILES, M. D.

Counsel.

D. B. EATON.

Attorney.

GEORGE BLISS, Jr.

Engineer.

WILLIAM E. WORTHEN.

Chief Clerk.

NORMAN A. BEACH.

State of New York.

No. 122.

IN ASSEMBLY,

January 15, 1868.

SECOND ANNUAL REPORT
OF THE METROPOLITAN BOARD OF HEALTH.

STATE OF NEW YORK:
Executive Department,
Albany, *January* 15, 1868.

To the Assembly:

I transmit herewith the Second Annual Report of the Metropolitan Board of Health.

R. E. FENTON.

REPORT.

To the Governor of the State of New York:

The Board of Health of the Metropolitan Sanitary District of the State of New York, composed of the counties of New York, Kings, Westchester, and Richmond, and of the towns of Newtown, Flushing, and Jamaica, in the county of Queens, in accordance with the 19th section of chapter 74 of the Laws of 1866, respectfully transmits its Annual Report for the year 1867. This is its second Report, and includes a review of its proceedings from November 1st, 1866, to October 31st, 1867.

Sanitary science is of slow growth, and time and patience are necessary in securing any important sanitary reform. The public mind must be educated as to the necessity of any change in the long-established habits of life and business, and commercial interests reluctantly submit to any restriction which does not appear to be positively essential to the general welfare. Self-interest is always a powerful element of resistance to all sanitary improvements which demand individual expenditures, and to any modifications in the manner of conducting those business pursuits which are, or are liable to become, detrimental to the public health. The Health Department of a great commercial district which encounters no obstacles and meets with no opposition, may safely be declared unworthy of public confidence; for no sanitary measures, however simple, can be enforced without compelling individuals to yield something of pecuniary interest or of personal convenience to the general welfare. With these facts constantly in view, this Board has earnestly endeavored to perform its important and delicate duties in such a manner as to accomplish the results desired by an enlightened public, with the least possible interference with any of the business pursuits incident to a populous district, and at the smallest possible expense to individuals and to the public. Although it is both necessary and proper that it should take the lead in all efforts for sanitary reform, it has spared no effort to secure the support of public opinion as necessary to the ultimate success of its sanitary measures. All has not been accomplished that is desired, but a careful and candid reference to facts will prove that greater success during the brief period since the organization of the Board could not reasonably be expected. A glance at the comparative mortality in the cities of New York and Brooklyn affords ample and incontestible proof of the value of hygienic measures, and of the success of this Board in their practical application.

COMPARATIVE MORTALITY IN THE METROPOLITAN DISTRICT.

The total number of deaths in the city and county of New York during the twelve months ending the last week in September, 1867, was 27,443. The total number in Brooklyn during the same period was 8,589. This aggregate of mortality includes all that occurred in the several public institutions which are situated within the limits of the counties of New York and Kings. In these various institutions, and in the other hospitals and asylums, there was 4,075 deaths. The deaths in the State Emigrant Refuge and Hospital, and at Castle Garden amounted to 561. Those on Blackwell's Island amounted to 1,674, and those in Bellevue Hospital to 816; but the latter number includes all the dead that have been conveyed to the "Morgue" and the Bellevue enclosure, for inquest by the Coroners. The records of the Bureau of Vital Statistics show that there were 3,152 less lives lost in New York during the year ending in September last than in the preceding year. The remarkable gain in favor of life in this crowded metropolis, as exhibited by these figures, may justly be claimed as the result and the legitimate consequence of the improved hygienic condition of the city. Brooklyn has shared equally with New York in this gain to the life and health of the people. Allowing for the absence of Asiatic cholera as an epidemic, which, in the months embraced in the first Annual Report of the Board, destroyed 407 lives in the city dwellings and 751 in the public institutions, against 88 deaths by the same cause in the last twelve months, the actual gain to the life and the sanitary security of the city population is only the more obvious; for the scourge of the previous year did not cease to menace the metropolis during the year 1867. But the full significance of any such statistical evidence of gain to life and health will be appreciated only when another important fact is considered in regard to the unhealthful and epidemic influences which characterized the past summer.

It was a season of incessant rains and excessive atmospheric humidity throughout a wide extent of country, the larger towns suffering an unusual amount of fatal sickness. The Report of the Bureau of Vital Statistics also shows that infant mortality and diarrhœal diseases continued through the summer to indicate a great degree of insalubrity, and that the deaths by infantile and all diarrhœal disorders, excepting cholera, nearly equalled the total mortality by the same causes, and at like ages, in the previous year. And the whole statistical evidence appears to indicate the fact that the gain has been made mainly in the chances of life at the adult ages, and in the districts where the greatest amount of sanitary work has been performed.

In the absence of an accurate census of the population, and of an exact knowledge of the present ratio of increase per year, the Registrar of Vital Statistics does not attempt to make the percentage estimations in the mortality tables correspond with the true or probable total population, but is compelled to base all calculations upon the published returns of the last census. Allowing nothing for increase of population, which is reasonably believed to have been at the rate of more than five per cent. per annum, the amount of gain upon the preventable causes of disease and premature mortality is probably as great as the most enlightened advocates of sanitary reform anticipated during the first year of such improvements as this Board has been able to inaugurate. Statistical evidence upon this subject is obtained by comparing the corresponding periods of successive years, and for that purpose the subjoined table has been prepared of the death-record of the six months that ended in the last week of September, 1867, with the corresponding period of 1866. It exhibits the important fact that the districts of New York that have long been most remarkable for insalubrity and high death-rates, and in which sanitary authority had to be earliest exercised and most persistently maintained, in order to give reasonable protection to the whole city, though still less salubrious than the districts inhabited by well-housed and self-regulated classes, have experienced a relatively greater gain to life and health. By removing the excessive filthiness of such wards as the Fourth, Sixth and Fourteenth—the foulest districts of New York—and by enforcing sanitary regulations among the crowded population thereof, the fatality and amount of disease greatly decreased, while, in such districts as the Fifteenth ward, where less was needed and much less expended in sanitary measures, the gain to life has been comparatively less. If the saving of life, as shown in this table, be regarded as the result of the generally improved sanitary condition of the city, or even if it were attributed in part to the absence of epidemic cholera, the conclusion still follows that the sanitary improvement in different localities is inevitably dependent upon local causes :

Table showing the Mortality from Zymotic Diseases, and the total by all causes, in certain Wards, by corresponding periods in the years 1866 *and* 1867.

WARDS.		4TH WARD.		6TH WARD.		14TH WARD.		15TH WARD.		TOTAL.	
		Zymotio.	Total.	Zymotic.	Total.	Zymotic.	Total.	Zymotic.	Total.	Zymotic.	Total.
1866.											
Quarter ending June		28	129	40	196	35	191	12	102	115	618
do do September		132	304	206	380	137	289	45	122	520	1095
1867.											
Quarter ending June		42	164	42	185	30	127	11	83	125	559
do do September		78	216	103	219	82	228	38	110	301	773
Totals in the corresponding six months.	1866.	160	433	246	576	172	480	57	224	635	1713
	1867.	120	380	145	404	112	355	49	193	426	1332
Difference, gain..........	......	40	53	101	172	60	125	8	31	209	381

GENERAL REVIEW OF THE PROCEEDINGS OF THE BOARD, FROM NOVEMBER 1, 1866, TO OCTOBER 31, 1867.

The danger to the public health of the Metropolitan Sanitary District from the introduction of disease from clothing and bedding used by the sick on shipboard having attracted the attention of the Board during the epidemic season of 1866, resolutions were adopted on the 8th of November prohibiting the landing of any clothing which had been exposed to contagious disease, until thoroughly cleaned and ventilated, or the introduction of any bedding which had been exposed during a voyage or otherwise to the poison of the typhus or typhoid fever, small-pox, cholera, or other dangerous disease. On the 15th of November, the attention of the Board was called to the alarming prevalence of typhus and typhoid fever at the Deaf and Dumb Asylum, at the foot of One Hundred and Sixty-second street, North River, and at the Reformatory in Eighty-sixth street, between First and Second Avenues. The physician in charge of the former institution had failed to report the cases of fever to the Board, as required by law, and nothing of practical importance had been done to arrest the epidemic. The Sanitary Superintendent was at once empowered to use disinfectants, and to take such other measures as should be necessary to preserve the health and improve the sanitary condition of the institutions referred to. On the 30th of November the President was directed by the Board to issue no permits on and after February 1st, 1867, to keep swine in the built-up portions of New York and Brooklyn; and on the 30th of May, 1867, an ordinance was adopted prohibiting any person from allowing swine or goats to run at large, or from keeping the same within the built-up portions of the cities of the District without a permit from this Board. The Board having ordered a sanitary inspection of the public schools of New York and Brooklyn, full and complete reports were received from the Inspectors, and the Superintendent was directed to present the same to the Board of Education, and to call its attention to the importance of placing the schools in a proper sanitary condition. On the 10th of January, 1867, the Counsel of the Board presented a series of proposed amendments to the "Act creating a Metropolitan Sanitary District and a Board of Health therein," which were approved by the Board, and a memorial to the Legislature, in their favor, was adopted. During the month of January, 1867, the Board caused a thorough inspection of the tenement houses of the District to be made by the Sanitary Inspectors. On the 24th of January, a communication was received from the Health Committee of the Assembly of the State of New York, asking information as to the condition of the tenement houses in the Metropolitan Sanitary District, which was referred to the Sanitary Superintendent. The report of that officer upon this subject was approved by the Board, and a copy of the same was forwarded to the Health Committee of the Assembly, with special reports by the Sanitary Inspectors upon certain tenement houses of the different classes. A resolution having been adopted by the Assembly of the State of New York, calling upon the Metropolitan Board of Health for "its opinion as to the necessity and the probable result of legislation looking to the more thorough restriction of prostitution in the city of New York," the subject was referred to the Sanitary Committee for examination and report. The report of the Committee was approved on the 17th of February, and a copy was transmitted to the Legislature of the State. On the 31st of February the Board adopted a preamble and resolutions to the effect that, in its judgment, provision should be immediately made by law for securing a suitable location on land for the detention of passengers under quarantine who are not actually sick, but have been exposed to contagious or infectious diseases; and that full and unrestricted authority ought to be invested in the Commissioners of Quarantine, or some other suitable officers, to obtain a site for that purpose, by an exercise of the power of "eminent domain," if it cannot be acquired by purchase. A copy of the preamble and resolutions was transmitted to the Legislature of the State of New York. On the 14th of March, the Sanitary Committee submitted a report on the danger from epidemic cholera, and the necessity of guarding against its introduction by securing a suitable quarantine station on land, which was adopted, and a copy of the same was transmitted to the Legislature. Complaints having been received against certain Coroners, charging them with neglect of duty and informality in their proceedings, the Board, on the 28th of March, directed the Sanitary Superintendent to report any cases of apparent informality or neglect of duty on the part of the Coroners of this district which may have come under his observation or that of the Registrar of Vital Statistics. The report of the Sanitary Superintendent, with the evidence taken in each case, was laid before the Board on the 4th of April, and copies of all the papers relating thereto were transmitted to the Governor of the State. On the 18th of April the Board ordered the Sanitary Superintendent to cause a thorough sanitary inspection to be made, twice in each year, of all the common school houses and the pupils in the cities of New York and Brooklyn, and that he require each Sanitary Inspector making such inspection to require from each pupil, or the teacher, a medical certificate of vaccination, which certificate said Inspector shall countersign only after having verified the same by personal examination; and that full reports of these inspections be laid before this Board at as early a date as possible after the completion of the same. On the 22d of April, this order was amended so as to apply to all industrial, parochial and mission schools, and generally to all public institutions for the education and care of children in the cities of New York and Brooklyn. The Sanitary Committee was authorized and directed to prepare a form of blank certificate of vaccination for the use of the schools. During the month of April the Board cause a thorough inspection to be made of all the slaughter-houses in the District. The facts, as stated by the Sanitary Superintendent and the Sanitary Inspectors in their general and special reports upon slaughter houses, tending to show the slaughtering of animals, as conducted in the built-up portions of the cities of New York and Brooklyn, to be prejudicial to their sanitary condition, the Board ordered that proceedings be commenced under the 1st clause of section 14 of the Health Law, against twenty-five of the most offensive slaughter-houses in the District. On the 9th day of May, the Board adopted an ordinance prohibiting the slaughtering of animals at any place in the city of New York south of Fortieth street, and prohibiting the slaughtering of animals north of that street, or in the city of Brooklyn, without a permit from this Board. On the 29th of April the Board visited Barren and Coney Islands, for the purpose of inspecting the grounds proposed to be taken for a Boarding Station and for temporary quarantine purposes, in pursuance of an act passed April 22d, 1867. At a joint meeting of the Commissioners of Quarantine, the Metropolitan Board of Health and the Mayors of New York and Brooklyn, the Board concurred in the selection of a part of Barren Island as a site upon which to erect a temporary structure for the detention of passengers under quarantine, and also in the selection of a part of Coney Island as a Boarding Station. By an act of the Legislature passed April 22d, 1867, it was made the duty of the Board, so long as it should allow the slaughtering of animals below Fortieth street, to designate the streets in which cattle may be driven between the hours of 8 o'clock in the evening and two hours after sunrise. On the 2d of May, the Board, by resolution, designated the streets and avenues for cattle-driving, and the number of animals to be allowed in a single drove. On the 11th of July, the Sanitary Ordinances were so amended by the Board as to entirely prohibit the driving or slaughtering of cattle below Fortieth street in the city of New York. On the 9th of May, the Board directed that such of its orders as relate to whitewashing, scouring, disinfecting, fumigating, cleaning of houses, and removing dirt and rubbish from the same (in default of the parties to execute said orders), be executed by the Board, under the supervision of the Sanitary Superintendent, and by the services of men under his control. On the 11th of July the Sanitary Superintendent was authorized to execute such of the orders of the Board as require construction and repairs (in default of the parties to execute said orders), but not to incur an expense, in the execution of any one order, of over $250. Rules and regulations were also adopted to govern the Sanitary Superintendent and Engineer in the execution of orders and the collection of bills. On the 16th of May, the Board adopted an ordinance prohibiting the unloading of pigs, swine, or cattle from any cars upon any street or public place in the city of New York. By an Act of the Legislature, passed April 23, 1867, the Board of Sewerage Commissioners of Brooklyn was authorized to drain land or lots in any part of said city, whenever notified in writing by the Metropolitan Board of Health, that the surface water was, or was liable to be ponded and to remain stagnant, so as to be or become a nuisance dangerous to the public health. Pursuant to the provisions of this Act, the Board, on the 16th of May, and on various other occasions during the season of 1867, upon recommendation of the Engineer and by resolution, caused notices to be served upon the Sewerage Commissioners in Brooklyn, that certain pieces and parcels of land, dangerous to the public health on account of the stagnation of surface-water, required their immediate attention. On the 13th of June, the members of the Board from Kings county were authorized to employ proper agents to remove the offal and dead animals from the shore extending from Gowanus to Fort Hamilton. On account of the frequent complaints from citizens of the rates charged by scavengers, the Board, on the 30th of June, adopted a schedule of rates and a form of bill to be used in all cases. On the 11th of July, the Sanitary Superintendent was directed to clean the gutters of the streets, avenues and public places south of Canal street, twice in each week, until the 1st day of October, 1867, the Board being of opinion that the public health demanded that that part of the city should be cleaned more frequently than is required by the city contract for street cleaning. The Assistant Sanitary Superintendent was also authorized to purchase lime and other disinfectants, for use in the city of Brooklyn, and to apply the same during the months of July, August and September, 1867, to such an extent as the sanitary condition of the city required. On the 11th of July, the Board adopted various amendments to the Code of Sanitary Ordinances; and the Code as amended having been published according to law, the Board of Metropolitan Police was requested to enforce the same. On the 20th of July, the Board adopted resolutions of respect to the memory of Commissioner John G. Bergen, deceased, and adjourned to attend his funeral. On the 25th of July, rules were adopted for the observance of Coroners in the counties of New York and Kings, in respect to reports to this Board, both before and after holding inquests, pursuant to the provisions of the Health Law as amended May 25, 1867. On the 6th of August, the Sanitary Committee and the Health Officer of the Port were appointed a committee to meet and confer with the Commissioners of Quarantine in reference to the sanitary questions that now concern the public health and the duties of the respective Boards. On the 22d of August, a form of permit for vessels to proceed from quarantine, and of a report of the Health Officer in each case, were adopted by the Board. On the 27th of August, the Attorney was directed to commence actions for a penalty against the owners of certain tenement houses, for violations of the provisions of an Act passed May 14, 1867, and known as the "Tenement House Act." An application of the President of the "Soldiers' Business Messenger and Dispatch Company" to this Board to determine the size and location of covered booths and stands on certain streets and sidewalks in the city of New York, pursuant to Chapter 382 of the Laws of 1867, was on the 19th of September referred to the Engineer for a report in each case, in regard to the propriety of such locations as affecting the public travel and convenience. The Engineer, having reported favorably on certain locations, the Secretary was directed, on the 3d of October, to notify the owners and lessees, and all others interested, to state to the Board their objections, if any, to the erection of covered booths or stands at said locations. On the 31st of October, the Board acted upon twenty-two applications, and granted four permits for covered booths or stands to the "Soldiers' Business Messenger and Dispatch Company." On account of the prevalence of the yellow fever at the Gulf ports, and the danger of that disease being brought to this District unless appropriate quarantine regulations were enforced, the Board, on the 31st of October, issued a proclamation declaring said ports to be each and severally "an infected place within the meaning of the Health Laws of this State," the proclamation to continue in force until the 21st of November, 1867.

Orders of the Board.

All reports to this Board, of inspections by the Sanitary Inspectors, or by the members of the Sanitary Company of Metropolitan Police, are made in writing, and must be sworn to before a notary public or an officer of this Board authorized by law to administer oaths. These reports are examined critically in the Sanitary Superintendent's Department, and such of them as require the action of the Board are forwarded to the Attorney for an endorsement of the proper order in legal form, or, if a structural remedy is required, to the Engineer. The complaint and proof in each case having been presented to the Board, the orders are entered, usually in the form recommended by the Attorney and Engineer, and copies signed by the Secretary are forwarded to the Sanitary Police for service upon the owners, occupants, tenants, lessees or agents of the premises upon which the nuisance exists. During the year ending October 31, 1867, the number of orders issued by this Board was fifteen thousand one hundred and eighty-six. Of these orders two thousand four hundred and seventy-six were under the *first* subdivision of section 14 of chapter 74 of the Session Laws of 1866, by the terms of which the party served is allowed three days in which to demand a "hearing" by the Board of the testimony which may be presented to show that the order should be revoked. In cases where no hearing has been asked for, and the order has not been obeyed, "final" orders, in the original or an amended form, to the number of five hundred and sixty have been issued and forwarded to the Sanitary Superintendent and Board of Metropolitan Police for execution. All other written orders, in number twelve thousand one hundred and fifty, have been issued under the *second* subdivision of section 14 of chapter 74 of the Session Laws of 1866, and are of a peremptory character, requiring that the nuisance be abated within five days, and if not obeyed, directing the Sanitary Superintendent or the Board of Metropolitan Police to enforce the same without further notice. The following is a statement of the subjects of the orders above referred to, other than "final orders:

Alleys cleaned	70
Alleys disinfected	1
Alleys graded	13
Alleys paved	23
Alleys repaired	3
Animals (dead) removed (number of orders)	1
Areas cleaned	193
Areas connected with sewer	3
Ashes, garbage, and rubbish removed	1,163
Balusters repaired	77
Basements cleaned	54

Basements filled	1
Basements vacated	3
Basements whitewashed	17
Bone-black manufacturing (business of) discontinued	1
Bone and offal boiling (business of) discontinued	3
Brewery connected with sewer	1
Cattle-yards cleaned	2
Ceilings cleaned	57
Cellars cleaned	877
Cellars connected with sewer	37
Cellars disinfected	1
Cellars drained	12
Cellars filled	42
Cellar gratings constructed	7
Cellar gratings repaired	11
Cellars graded	9
Cellars whitewashed	50
Cesspools cleaned	82
Cesspools connected with sewer	37
Cesspools (covers made for)	2
Cesspools disinfected	51
Cesspools emptied	64
Cesspools filled	23
Cesspools made	40
Cesspools repaired	11
Chimneys extended	4
Chimney flues (obstructions in) removed	11
Chimneys repaired	65
Chimneys (wooden) constructed	1
Cisterns cleaned and emptied	90
Cisterns (covers made for)	16
Cisterns disinfected	46
Cistern filled	50
Cisterns made	2
Cisterns repaired	13
Cows removed (number of orders)	47
Culverts made	1
Curb stones reset to the established grade	38
Ditches cut	3
Ditches cleaned	2

Drains cleaned	24
Drains filled	18
Drains made	172
Drains (obstructions in) removed	235
Drains removed	5
Drains repaired	288
Excavations filled	23
Fat-boiling (business of) discontinued	8
Flagging in yard repaired	79
Floors (house) repaired or relaid	43
Floors (privy) repaired	133
Floors (stable) repaired	1
Fowls removed (number of orders)	1
Garbage boxes cleaned	2
Gutters (house) repaired	101
Gutters (street) cleaned	40
Gutters constructed	14
Gutters (obstructions in) removed	43
Gutter-stones reset to the established grade	239
Halls cleaned	340
Halls whitewashed	305
Holes in yard filled	9
Horses removed (number of orders)	6
Houses (wood) cleaned	8
Houses repaired	7
Hydrants removed	3
Hydrants repaired	115
Hydrant waste drained	6
Leaders connected with sewer	19
Leaders extended	73
Leaders (new) made	23
Leaders repaired	310
Lime burning (business of) discontinued	4
Lots cleaned	110
Lots connected with the sewer	18
Lots drained	7
Lots filled	128
Lots graded	52
Manure depots removed	2
Manure removed (number of orders)	422

Manure vaults cleaned	22
Manure vaults constructed	435
Manure vaults (covers made for)	378
Manure vaults disinfected	7
Manure vaults emptied	5
Manure vaults repaired	15
Offal removed (number of orders)	3
Pavements repaired	8
Piers repaired	3
Pig pens disinfected	44
Pig pens cleaned	60
Pig pens removed	3
Pigs removed (number of orders)	67
Pipes (waste) cleaned	17
Pipes (waste) connected with sewer	19
Pipes (sewer) constructed	1
Pipes (waste) constructed	12
Pipes (waste) extended	1
Pipes (soil) obstructions in, removed	78
Pipes (water, waste and hydrant) obstructions in, removed	72
Pipes (gas) repaired	2
Pipes (sewer) repaired	2
Pipes (soil) repaired	150
Pipes (waste) repaired	247
Pipes (water) repaired	201
Pipes (waste) trapped	110
Plastering removed and walls replastered	155
Ponds drained	2
Ponds filled	6
Premises cleaned	579
Premises connected with sewer	122
Premises disinfected and fumigated	85
Premises repaired	24
Premises whitewashed	256
Privy-boxes constructed	16
Privies built	10
Privies disinfected	9,456
Privies emptied and cleaned	9,506
Privy-houses cleaned	250
Privy-houses removed	13
Privy-houses repaired	508

Privy-seats repaired	77
Privy-sinks connected with sewer	647
Privy-sinks filled	659
Privy-sinks made	83
Privy-vaults repaired	470
Pump (force) constructed	1
Pump removed	1
Pumps (force) repaired	2
Rags removed	2
Railings constructed	14
Railings repaired	6
Roofs cleaned	12
Roofs repaired	737
Rooms and premises ventilated	6
Sausage-case and gut-cleaning (business of) discontinued	1
Sewers cleaned	3
Sewers repaired	8
Sewer connection cleaned	1
Sewer-pipes extended	7
Sewer-pipes, obstructions in, removed	1,665
Sewer-pipes repaired	1,663
Sewer-pipes trapped	269
Sheep-skins curing (business of) discontinued	1
Sidewalks repaired	179
Sidewalks cleaned and obstructions removed	10
Sinks disinfected	6
Sinks emptied and cleaned	17
Sinks repaired	12
Sky-lights repaired	63
Slaughtering (business of) discontinued	117
Slaughter-houses cleaned	11
Slaughter-houses (floors of) cleaned	13
Spaces, vacant, disinfected	8
Spaces, vacant, cleaned	52
Spaces filled and graded	8
Stables cleaned	42
Stable floors graded	12
Stagnant water removed	190
Stairways cleaned	18
Stairways repaired	70
Steam exhaust pipes extended	3

Stoops repaired	10
Sulphuric acid manufacturing (business of) discontinued	1
Swill-boiling (business of) discontinued	6
Tanks constructed	3
Tanks repaired	6
Tunnels cleaned	1
Urinals cleaned	4
Urinals connected with sewer	2
Urinals repaired	3
Vaults cleaned	11
Vaults repaired	1
Ventilators constructed in roofs	43
Walls cleaned	58
Walls constructed	2
Walls repaired	4
Walls and ceilings repaired	12
Walls and ceilings whitewashed	109
Water-closets cleaned	104
Water-closets connected with sewer	36
Water-closets disinfected	10
Water-closets repaired	29
Water-closets and urinals constructed	36
Wells cleaned and filled	2
Wells emptied and cleaned	1
Wells repaired	1
Windows cut and hung	91
Windows repaired	3
Yards cleaned	768
Yards (stable) cleaned	6
Yards drained	6
Yards filled	12
Yards (stable) graded	9
Yards graded and repaired	154
Yards paved	5

EXECUTION OF ORDERS.

The orders of this Board directing the sanitary improvement of premises, have been executed in a large majority of cases by the owners, lessees or agents. Whenever a party upon whom an order has been served has appeared before the officers of the Board, and stated that, in his opinion, the order was in any respect unreasonable, the premises have been carefully re-inspected, and no effort has been spared to relieve property owners from all expense and annoyance which could possibly be considered unnecessary. In cases in which the orders of the Board were disregarded, they have been executed by the Sanitary Superintendent. The efficient corps which was organized during the epidemic of 1866, for cleaning and disinfecting the premises in which cases of cholera occured, has been continued during the present year, and its services have been invaluable in cleaning, disinfecting and whitewashing houses and cellars, and in removing rubbish and garbage from the same. The bills for this service are designed to cover only the actual expenses to the Board in this department, and have generally been regarded as reasonable, and promptly paid. The orders for scavenger work have been executed by the licensed scavengers of the District, and under the supervision of the Captain of the Sanitary Company of Metropolitan Police. A scale of rates for this important service having been adopted by the Board, the bills for work have been made to conform thereto. The rates, as adopted, for scavenger work, have proved to be sufficiently remunerative to the parties engaged in that business, and have been satisfactory to the public generally. Orders which require structure or repairs (in default of the parties to execute said orders), are also executed by the Sanitary Superintendent. They are generally referred to the Engineer of the Board for his inspection, and are executed under his supervision by responsible parties, at established rates. When bills for work done in the execution of the orders of this Board by its officers or agents are not paid, they are filed as a lien upon the property upon which the work is done, pursuant to the provisions of the Health Law as amended May 25th, 1867. The Board would prefer, in all cases, that the parties responsible for the condition of any locality would execute the orders designed to improve its sanitary condition, and thus be relieved from the responsibility and labor which attends the execution of its orders. But when the responsible party absolutely refuses or wilfully neglects to remove nuisances which exist, the Board is compelled to use its powers for the preservation of the public health. From the fact that the relative number of orders executed by the owners and lessees is continually increasing, as the provisions of the Health Law are more generally understood, it is confidently believed that the Board will be almost entirely relieved from the execution of orders by its officers and agents.

Over three thousand violations of the Code of Sanitary Ordinances and of the Health Laws were reported at the office of the Assistant Sanitary Superintendent in Brooklyn, during the past year. In about two thousand and seven hundred of these cases, the causes of complaint have been removed, and the nuisances abated, and this has been generally accomplished upon preliminary notices of prosecution. In the three hundred cases unaccounted for the time allowed upon the preliminary notices has not yet expired, or they are waiting adjudication by the courts. About fifty fines have been imposed, the amounts ranging from $3 to $25. The character of the nuisances abated, the disposition of the cases tried, the fines imposed, etc., appear in the report of the Assistant Sanitary Superintendent. (Appendix A.)

Sanitary Improvement.

The result of the operations of this Board during the past year, and the progress of sanitary reform throughout the Metropolitan Sanitary District, can be illustrated by a reference in detail to those matters which have engaged the attention of the Sanitary Inspectors, and are the principal subjects of the orders of the Board.

1. *Areas, Alleys, and Yards.*—The condition of the areas, alleys, and yards of the District has materially improved during the present year, due partially to the frequent inspections and suggestions of the sanitary officers, and in part to the fact that the public more fully realize the importance and necessity, in thickly populated districts, of constant attention to cleanliness in their habitations and the surroundings. Large accumulations of filth and garbage have been removed by the employés of this Board from the yards and areas of tenement property, the owners or lessees of which had disregarded the orders for its removal, and were indifferent to the health and comfort of their tenants. The deficient pavement of those alleys which are used for the purpose of carrying the hydrant and waste water from dwellings and tenement houses to the street gutter, and which is the result of long use or original imperfect construction, is a source of frequent complaint. The filthy and stagnant water has been permanently removed from these alleys, by regrading the same or by necessary repairs, and, in some cases, by connecting the hydrant and waste-

pipes of the premises with the street sewer. Stagnant and filthy water in the yards of dwellings is constantly reported to this Board, and has required considerable attention. The usual remedy is to repave or regrade the premises, so that the water will flow into the street sewer or gutter, but in many cases it is necessary to raise the grade by filling with fresh earth or ashes, or to connect the entire premises with the street sewer.

2. *Ashes, Garbage, and Rubbish.*—The removal of ashes, garbage, and rubbish from the dwellings, tenements, and streets of New York and Brooklyn is not accomplished in a manner satisfactory to this Board. In New York this is, to a great extent, chargeable to defects in the contract for cleaning the streets, and not to the negligence or inefficiency of the contractor. For, under this contract, the employés of the street-cleaning department are not obliged to receive the ashes and garbage in the buildings, but the occupants are to deliver it in the street. The practical result is that ashes and garbage are placed upon the sidewalks in pans, boxes and barrels, which are overturned by passing carts and by careless or mischievous pedestrians, and their contents scattered through the streets by the wind. Under the present contract it is also difficult to enforce any ordinance forbidding that the ordinary sweepings of stores and dwellings shall be cast into the street. However perfectly a street may be cleaned during the night, the sweepings from the adjacent buildings on the following morning render it dirty and disagreeable. The general removal of swine from the built-up portions of the city has caused the garbage to be consumed, to a considerable extent, in the suburban districts. This has been a source of repeated complaints from the citizens of those districts. But, until the contractor for cleaning the streets and removing the garbage shall inaugurate a system by which all the garbage shall be collected separately from the ashes, and carried to a considerable distance from the city for consumption, this Board cannot entirely remove the difficulties which surround the removal of house garbage, and its utilization. In Brooklyn, the city authorities have made no adequate provision for the removal of garbage, and whenever private enterprise has failed to afford relief, and the public health has been endangered by its accumulation, it has been removed under the authority of this Board.

3. *Basements and Cellars.*—The sanitary condition of cellars and basements has constantly received the attention of the officers

of the Board. The accumulation of filth and stagnant water beneath human habitations is an acknowledged source of disease, and no effort has been spared to attract the attention of citizens to this subject. Damp cellars have been improved by the use of lime and by ventilation, and stagnant water removed by drains and sewer connections. Where drainage is found to be impossible, the cellars have been ordered filled or partially filled with fresh earth and ashes. In some districts, bordering upon the rivers, mostly occupied by stores, warehouses, and factories, the cellars are constantly wet from the action of the tides, and nothing but an improved system of sewerage will afford relief. The use of asphaltum and other cements for damp and wet cellars promises to be of great value, both in an economical and sanitary point of view. The occupation of dark, damp, and unventilated cellars and basements as human habitations has largely decreased during the year, with the probability of complete reform in this particular, whenever the number of dwellings and improved tenement houses is increased, cheap and easy communication with the rural districts is established, and the provisions of the "Tenement House Act," passed at the last session of the Legislature, are rigidly enforced.

4. *Bone, Offal, and Fat Boiling.*—The establishments in the built-up portions of the District engaged in this class of business are generally conducted in a manner satisfactory to this Board and to the public. Since the organization of this Board, new and improved machinery for concentrating the odors has been introduced, and the use of tight tanks generally adopted. It is only when the proper machinery is imperfectly constructed, or when the proprietors neglect to use the proper precaution and care, that offensive odors are allowed to escape into the external air. A report of Ispectors Morris and Janes upon the factories of the New York Rendering Company, at the foot of West Thirty-ninth street, for the utilization of dead animals and offal, is transmitted herewith (Appendix G). This company has adopted the general plan recommended by the Board in its last Annual Report, and it promises in its results to be a complete success.

5. *Cesspools and Cisterns.*—Whenever connections with sewers or other methods of drainage are possible or practicable, this Board has discouraged the use or continuance of cesspools as receptacles for filthy and waste water. A few cesspools have been constructed; many old ones have been filled with fresh earth or ashes, and, when necessarily tolerated, frequent disinfection and cleansing

have been required. Old cisterns filled with stagnant water or used as receptacles for filth are the most dangerous nuisances of this class, and when discovered by the inspectors, have received immediate attention. New cisterns are rarely constructed in the built-up portions of the city, and the number of old ones is rapidly diminishing.

6. *Cows and Cow-Stables.*—The business of keeping milch cows in the city of New York has been almost entirely discontinued. Permits have been granted in cases where the inspectors were satisfied that the cows were fed upon hay and grain, and not upon the hot swill of distilleries, and that the stables were ventilated and generally clean, and were so isolated as to be inoffensive to the public. The ordinance adopted by the Board, limiting the number of cows to one for each city lot of 100 + 25 feet, has been generally enforced, and has proved to be a valuable sanitary regulation. The "swill-milk nuisance," as it formerly existed in the city of New York is considered practically abated. One great cause of infantile mortality is thereby removed, and the public is to be congratulated upon the great reform inaugurated.

In the city of Brooklyn, the swill-milk establishments are legalized by a special ordinance of the Common Council (see sec. 20, art. 4, chap. 5 of the Ordinances of that city), and it has been impossible to entirely abate these nuisances. An improved ventilation of the larger cow-stables and more attention to cleanliness have been secured as the result of frequent inspections, but until the special privileges conferred upon the distillers by the ordinance above referred to are withdrawn, the District cannot be entirely relieved from the evils of impure milk.

7. *Culverts, Drains and Ditches.*—The Board, by its orders and through its officers, has attracted the attention of the citizens of the Metropolitan District to the importance of thorough drainage. In the rural portions of this island many vacant lots have been relieved of the stagnant water constantly complained of as the source of malarious disease, and the obstructions have been removed, under the orders of the Board, from culverts, drains and ditches heretofore constructed. In the city of Brooklyn, the Board of Water and Sewer Commissioners, under an act passed by the last Legislature, and upon notice and recommendation by this Board, has abated some of the most dangerous nuisances in that locality. In some parts of Westchester County the local

authorities are actively engaged in the drainage of marsh lands, and the most satisfactory results are anticipated. In Richmond County, many intelligent and influential property owners are active in devising measures and maturing plans for the improved drainage of that beautiful locality. The advice and assistance of the officers of this Board are furnished to all projects of this character, affecting so directly the public health of the rural portions of the Metropolitan District.

8. *Curbstones and Gutters.*—In the densely populated and most filthy sections of the District, the condition of the street gutters is a constant source of complaint. The extensive depressions of the curb and gutter-stones, resulting from the careless manner in which they were originally laid or from the continual passage of heavy carts and trucks, are the receptacles of waste water, slops, filth and garbage from adjacent tenements, and emit the most offensive odors. The only remedy is to order the curb and gutter stones relaid in accordance with the established grade, an order the execution of which is not readily secured, for the reason that several property owners are often responsible for the nuisance, and unity and harmony in their action is with difficulty obtained, and because it is often impossible to ascertain from any record the proper grade of the street. Considerable relief is afforded by connecting the adjacent premises with the street sewer, but permanent sanitary reform in this particular cannot be expected until an ordinance can be enforced to prevent the use of the gutters for the deposit of filth from dwellings and tenements. No difficulty is experienced in preventing obstruction of the gutters from the erection or repairs of buildings.

9. *Houses and Tenements.*—During the present year, public attention has been directed to the improvement of the tenements of the poor and to the erection of a class of buildings which shall combine the advantages of safety, an ample supply of air and light, and the comparative isolation of families, so necessary to the proper preservation of the domestic relations. The passage of the Tenement House Act by the last Legislature is an important event in the progress of sanitary reform, and though at first regarded by property owners as very onerous, if not unjust, the law has gradually gained favor, and will ultimately be approved for economical as well as sanitary reasons. Already there is a decided improvement in the condition of tenement houses; the health of their inmates has been improved; the rate of mortality

has decreased; and this Board is more rarely called upon to interfere to secure the observance of cleanliness and the more simple sanitary measures. Both owners and agents have, during the present year, manifested a willingness to adopt the suggestions and obey the orders of this Board. For the details as to the condition of tenement houses, and the improvements necessary, you are respectfully referred to the report of the Sanitary Superintendent and accompanying documents (Appendix A).

10. *Hydrants, House-gutters, and Leaders.*—The Sanitary Inspectors continue to report yards wet from imperfect hydrants or their careless use; cellars rendered damp from leaky house-gutters and leaders, and dwellings almost untenantable from defective or broken waste and soil-pipes. In such cases the necessary repairs have been ordered, but similar complaints must continue to be frequent so long as cheap and careless plumbing is tolerated, and buildings are constructed with such indifference to the permanence of the necessary fixtures.

11. *Lime and Shell-burning.*—The business of lime and shell-burning in the built-up portions of the city of New York has been almost entirely discontinued during the present year, and great relief has been experienced in the absence of the dust and offensive odors resulting therefrom. Experimental efforts have been made to conduct this business in a manner that shall not be offensive or detrimental to health, but without complete success.

There are, in the city of Brooklyn, four establishments for the manufacture of shell-lime. These shells, gathered from the oyster saloons and fish markets, and mixed with the entrails of fish and other decaying animal matter, when burned in kilns, produce a sickening odor and an offensive dust, which are a great annoyance to the people of the vicinity. The largest of these kilns is located in a densely populated neighborhood, and within one hundred yards of a public-school building containing over one thousand children; and the other three, although in the suburbs of the city, are not far removed from rows of dwelling houses. Orders have been issued to suspend this business until it shall be so conducted that no offensive odors shall escape into the external air, and legal proceedings have been commenced to secure the enforcement of these orders.

12. *Markets.*—No material change in the condition of the public markets has taken place during the past year. Soon after the

organization of this board, a thorough inspection was made of Washington and Fulton Markets, and measures were inaugurated for their sanitary improvement and for the removal of the surrounding stalls and stands. An appeal from the proceedings of the board to the courts delayed the necessary action, and at the last session of the Legislature, the Health Law was so amended as to withdraw from this board "its officers and agents, all power and authority to order the removal, tearing down or injury of any of the stalls or stands around Fulton or Washington Markets, in the city of New York, at any time before the first day of May, 1869." To secure the cleanliness and a proper ventilation of these markets, the removal of the surrounding stands is absolutely necessary; but the action of the Legislature and the courts has relieved this board of all responsibility for their disgraceful sanitary condition. It is most earnestly recommended that this market property should be sold by the city, as its use for this purpose, in its present condition, is detrimental to the public health; is a source of fraud and corruption, and by fostering a large and unnecessary class of middle-men, is a burden and tax upon the people. The sanitary and economical considerations which demand the sale of this property are stated in the last Annual Report, and will be more fully noticed in a report which will be submitted to the Legislature, pursuant to an act relating to the Metropolitan Board of Health (chap. 956, Laws of 1867), which directs this "Board to propose and submit to the next Legislature plans and recommendations for the building of one or two markets, whichever they shall deem necessary, to replace Fulton, Washington, and West Washington Markets, in said city."

13. *Manure, Manure-Vaults, and Stables.*—During the present year, stable-manure has not been allowed upon vacant lots to any great extent, and has generally been removed with the promptness and regularity required by the sanitary ordinances. Many manure-vaults have been constructed upon the recommendation of the Sanitary Inspectors, or by order of the Board, and the drainage of stables has received the necessary attention. Improvements in the construction of stables, repairs to those already built, and a general attention to their cleanliness, are the gratifying results of the frequent inspections of this important class of city structures.

14. *Piers.*—The attention of this Board is frequently called to the obstructions upon the piers, and their consequent want of

cleanliness, and to their decayed and dilapidated condition, rendering them dangerous to life and detrimental to health. Sanitary considerations demand appropriate legislation upon this subject, and the future commercial supremacy of the city of New York seems dependent, to a considerable extent, upon prompt and decisive action.

15. *Privies.*—The improved condition of the privies and sinks of this District, and the greater attention paid to this subject by the public generally, is illustrated by the fact that in the eight months ending October 31, 1866, 15,214 privies were emptied and cleaned by order of this Board, while during the entire year ending Oct. 31, 1867, only 9,506 privies were emptied and cleaned under the same authority. It is believed that there will be in future less necessity for the interference of the Board in order to secure the cleanliness of the District in this particular. The experiments in disinfection have proved entirely successful, and privies are, with proper care on the part of scavengers, emptied without offence. No scavengers are allowed to operate without a license from this Board and without the proper carts and utensils, which are subjected to periodical inspection, and the bills for work done are made upon forms approved, and at the rates established by this Board. A large number of new privy sinks have been constructed during the present year, and connected with the street sewers, thus avoiding the necessity of frequent cleaning and emptying. To secure a proper sanitary condition of the privies in certain districts bordering upon the rivers is almost impossible under the present sewerage system, on account of the constant action of the tides.

16. *Rags.*—The complaints in respect to the manner of conducting the traffic in domestic rags, which were frequent during the year 1866, are now rare and of trifling importance. The removal of all unnecessary restriction upon foreign rags imported in large compressed bales, has given general satisfaction, and has not been attended with any unfavorable results.

17. *Sewers.*—The sewerage of the cities of New York and Brooklyn is gradually being improved and extended by the competent authorities having in charge this important auxiliary to sanitary reform. Any complaints in respect to defective or obstructed sewers are referred to the Croton Aqueduct Department of New York, and the Board of Water and Sewer Commissioners

of Brooklyn. Both Boards have been prompt to aid in every effort for sanitary improvement, and have hastened the completion of such sewers as this Board has declared immediately necessary for the promotion of the public health.

One important defect in the sewerage system is worthy of particular notice. The street sewers, which should discharge at the end of the piers, empty their contents into the slips, which are thereby converted into huge and offensive cesspools, in which the filth is washed back and forth by the tide, poisoning the water and contaminating the air.. All who frequent the docks complain of the offensive odors from the slips, and that large and important part of the population actively engaged in foreign and domestic transportation, and living and sleeping upon vessels in port, suffer in health from the constant inhalation of the impure air in the vicinity. Large quantities of fish are placed in boxes, which are moored in slips adjacent to the market, and there confined until sold. The impure water causes a rapid depreciation in the quality and value of this important article of diet, and adds to the stock of unwholesome and unhealthy food which is supplied by the unscrupulous, at cheap rates, to the poor and indigent. To clean and dredge the slips which are constantly obstructed by the accumulation of filth from the sewers, is a large and unnecessary expense to the public, and materially interferes with the commercial pursuits of the District.

18. *Slaughter-houses.*—During the present year, the slaughter-houses have been removed from that portion of the city of New York below Fortieth street and are now located, with few exceptions, between Fortieth and Fiftieth streets and near the North and East rivers. The number has been reduced from about one hundred and fifty at the date of the last report to forty, and it is probable that this number will gradually diminish as those parties having eligible positions immediately upon the banks of the rivers enlarge their buildings and afford increased accommodations for slaughtering. The slaughter-houses now in operation have permits from this Board, and are subject to frequent inspection. The number of permits for slaughter-houses in Brooklyn is twenty-four, and they are mostly small establishments.

Citizens in large numbers petitioned for, and generally desire, the removal of slaughter-houses and the nuisances which invariably accompany and surround them, from the central and most densely populated portions of the city. It is believed that a large majority of the butchers approve the action of the Board, and do not desire to resume business in the old locations. The Board considered that a great sanitary improvement had been effected in the business of slaughtering and driving animals, and had anticipated that it would be permanent. Suits were instituted by a few butchers who were unwilling to conform to the regulations so generally approved, and deemed essential to the public health.

In these suits, the Supreme Court in the First District has recently decided that the Board does not possess the power to prevent the driving of cattle in the streets of New York below Fortieth street, nor to prevent slaughtering at the old slaughter-houses below that street. The reasons given for these decisions are of such a nature, and are so stated as to render it quite difficult to decide what may be their effect upon the general powers and practical efficiency of the Board. In the present condition of these subjects before the courts, it is not in the power of the Board to prevent the resumption of the driving and slaughtering of animals below Fortieth street, where they have been discontinued since the 28th of August last.

19. *Streets.*—With the exception of a part of the winter and spring of the present year, when the severe weather interfered with the operations of the street-cleaning contractor, the streets of New York have been in a tolerably cleanly condition. During the existence of the present contract, any decided improvement in the sanitary condition of the streets cannot reasonably be expected. In the unpaved sections of the city, the streets have been cleaned under the authority of this Board, and in that part of the city below Canal street considerable work has been performed, under its direction, in cleaning the gutters of the most filthy localities. In Brooklyn there has been no material change in the condition of the streets, or in the system of street-cleaning. The Aldermen control the cleaning of the streets in the several wards which they represent, and the work is generally done by contract. The streets of several wards have been so filthy that the authorities, under the pressure of public opinion, have refused to pay the contractors, and upon complaint of the Sanitory Inspectors, they have been arrested and fined for neglect of duty. The amount appropriated for street cleaning in 1866 was $54,000, and in 1867 was $73,000, but these sums, even if honestly expended, would not be sufficient for the purpose. A general law, which will place this important sanitary work in the hands of responsi-

ble persons, subject to proper restrictions and regulations, is desirable and necessary.

20. *Swine.*—The keeping of swine in the built-up portions of the cities of the District has been almost entirely discontined under the orders and ordinances of this Board. Complaints from the suburban districts are occasionally presented, which have in some cases required the interference of this Board.

21. *Vacant Lots and Ponds.*—Many sunken lots, the drainage of which was impracticable, and which were dangerous to the public health from stagnant water, have been filled with earth and ashes, under the orders of this Board, or upon the recommendation and suggestion of its officers. The difficulty in obtaining the names of the owners, and the frequent changes of ownership, often cause delay in the execution of the orders of the Board upon this class of property. The city of Brooklyn has been relieved to a great extent by the act passed by the last Legislature, empowering the Board of Sewerage Commissioners, upon the recommendation of the Metropolitan Board of Health, to lay drains above or below the surface and across any unoccupied lands, and to assess the expense upon the property. A similar law would prove of immense pecuniary and sanitary value to New York, and other parts of the District, especially in cases where the owners of vacant lots are non-residents or cannot be found.

PERMITS.

To secure a proper police regulation and sanitary supervision of those business pursuits which, if improperly conducted, are detrimental to health, this Board grants permits, which are liable to be revoked whenever due attention to cleanliness and to sanitary rules and regulations is not faithfully observed. In all cases, the premises are carefully inspected by a sanitary officer, and a written report of such inspection is transmitted to the Board before a permit is granted. To guard the health of the city, vessels from infected and suspected ports which have been discharged from quarantine, are not allowed to land their cargoes in New York and Brooklyn without a permit from this Board. To illustrate this branch of the business of the Board, the following table is submitted, of the more important subjects of permits granted during the year ending October 31st, 1867 :

To land cargo from vessels from infected and suspected ports,	1,374
To dump manure on vacant lots (period limited)	28
To keep cows	41
To keep goats	80
To keep geese	6
To keep pigs, previous to January 1, 1867 (period limited),	108
To keep pigs since January 1, 1867	4
To kill and remove diseased and disabled horses	241
To render fat	7
To sell fruit	36
To sell fish	57
To sell meat and vegetables	514
To slaughter animals in New York, since June 15, 1867	41
To slaughter animals in Brooklyn, since June 15, 1867	13

THE BUREAU OF VITAL STATISTICS.

Sanitary government and an intelligent appreciation of the conditions, indications, and results of unhealthfulness. or of hygienic improvement, require that the vital statistics of the population should be carefully studied and faithfully recorded, as means of direct aid to the administrative and executive work of the sanitary authorities. This Board has maintained its Bureau of Vital Statistics for this most practical purpose, as well as for the immediate and ultimate uses which the mere registry of the vital records may serve for other purposes as public documents. The public, at large, throughout our country has constantly acknowledged the practical benefits conferred by this department of the Metropolitan sanitary system. And, it is undoubtedly true, as stated by a distinguished English sanitarian, that "the fact that, in modern times, the subject of hygiene has commenced to attract so much of the public attention is undoubtedly owing to the application of statistics to public health." The Bureau of Vital Statistics has been carefully organized upon a plan that brings it into advantageous correspondence with the departments of vital statistics in the other chief cities of the civilized world, in which good sanitary systems of government prevail. It makes vital statistics and the study of the causes, places, and circumstances of death, together with the records of diseases and epidemics directly tributary to the practical knowledge of hygiene and to the application of its principles. In the opinion of this Board, the practical uses of vital statistics are invaluable, and the ultimate results of their study are not uncertain, for it is impossible for any government to remain indifferent when, in figures which admit of no denial, the amount of health and happiness, or disease and suffering, is determined.

REGISTRATION OF BIRTHS AND MARRIAGES.

The total number of births registered in New York during the year was 12,569, and the number registered in Brooklyn was 4,878. This, of course, is not the full number of births that occurred in these cities, and special efforts are being made to ascertain the whole number, and to have the benefit of registration conferred upon all. The daily and almost hourly applications for certified transcripts of birth records, prove that the practical utility of such registration has become widely known, and that no city or state should be indifferent to this important subject, and that no parent or physician should neglect to make prompt and full registration of births. It is believed that not less than 31,000 births occurred in New York, and not less than 12,000 in Brooklyn, during the year. This conclusion is a legitimate deduction from the recognized laws of increase by births in city populations, and from an ascertained rate of marriages in the year. Complete registration of births in these cities, and entire accuracy in the city census, alone can give the information which the sanitary government and the public alike require upon the important questions concerning infant life in the population of the District.

The number of marriages certified and duly returned for registration during the year was 15,026 in New York, and 1,349 in Brooklyn. The applications for transcripts from the records are constant witnesses to the usefulness of this branch of registration, and it is confidently believed that in each succeeding year the number of persons so unwise as to neglect to record their marriages will be greatly diminished.

HEALTH LAWS AND SANITARY ORDINANCES.

The Act passed May 23, 1867 (chap. 956, Laws of 1867), relating to the Metropolitan Board of Health, and the duties and powers of the Commissioners of said Board, was designed to correct defects in the existing law and to secure efficiency in its practical operation. The wisdom of its provisions has been fully demonstrated. An Act for the regulation of tenement and lodging-houses in the cities of New York and Brooklyn, passed May 14, 1867 (chap. 908, Laws of 1867), has already secured many important reforms in the sanitary condition of this class of dwellings, and promises in the future to remove many of the principal causes of the fearful mortality which has prevailed in the crowded habitations of the poor. An Act, with reference to the powers of the Metropolitan Board of Health in the regulation of cattle-driving, passed April 24, 1867 (chap. 700, Laws of 1867), by which this Board was authorized to designate the streets and avenues through which cattle should be driven, and to establish rules and regulations as to the manner of conducting this business, has been the means of abating a most serious and dangerous nuisance, has afforded additional security to the comfort and safety of the people, and has diminished the number of accidents to life and limb which have frequently resulted from the unrestricted transit of animals through the densely populated portion of the city. An Act, passed April 23, 1867 (chap. 687, Laws of 1867), by which the Board of Sewerage Commissioners of Brooklyn was authorized to remove stagnant water from any part of that city, upon notice from this Board that the same was dangerous to the public health, is likely to prove of great importance, not only to the health but also to the taxable wealth of that locality. The Code of Sanitary Ordinances adopted by this Board April 20, 1866, was amended on the 11th day of July, 1867, and published according to law. Such additions and modifications only were made to the code originally adopted as the experience of the previous year, in the enforcement of sanitary measures, seemed to require, or were imperatively demanded by public opinion. This Code of Sanitary Ordinances is based upon the rules and regulations which have been adopted by the proper authorities, from time to time, during the past century, for the security and preservation of the public health, and no material change or modification seems to be necessary at the present time.

Public Schools.

The public schools have been a subject of special investigation during the past year by this Board, both with reference to vaccination and to their sanitary condition. In the city of New York, there are ninety-nine school buildings, in which were taught during the year 1866, one hundred and eighty-six thousand six hundred and forty-nine pupils, in the regular day sessions, making an average of eighteen hundred and eighty-five scholars to each school. In the city of Brooklyn, forty separate edifices are occupied for public-school purposes. In these schools, forty-six thousand four hundred and thirteen children were enrolled during the year 1866, the average attendance being forty-five per cent. of this number, or about twenty-one thousand, being an average of five hundred and twenty-five to each school.

The prominent evils in the schools of the city of New York reported by the Sanitary Inspectors are:

1. *Overcrowding.*—It is in the primary departments that the class-rooms are over-crowded, and in some of them it is ascertained by actual measurement that only twenty-two cubic feet of air space is allotted to each pupil. In a class-room fourteen feet square by twelve feet in height were found one hundred and nine children, and the Inspector was informed that, sometimes, as many as one hundred and twenty were crowded into it. Were not the windows occasionally opened, a few hours' confinement in such apartments would produce asphyxia of all the inmates. In the valuable report of Assistant Superintendent N. A. Calkins, embodied in the Annual Report of the Board of Education for 1866, it is stated: "From the several estimates it appears that fifty per "cent. of the children in the primary schools are placed in less "than forty per cent. of the entire space of the class-rooms. The "school laws of England require at least eighty cubic feet of in"ternal space in the school-room for each child in average attend"ance.

2. *Insufficient Ventilation.*—Many of the schools in this city depend almost entirely upon the windows for fresh supplies of air, which in cold weather can only be furnished at great risk to the health of the pupils. In respect to one of the public schools, a Sanitary Inspector reports: "Ventilation, one of the most im"portant elements in the construction of all public buildings where "large numbers congregate, has been entirely overlooked. No "adequate means have been provided for thorough or systematic "admission of that life-sustaining principle so abundantly com"bined in atmospheric air, nor for removing the poisoned atmos"phere generated in the overcrowded class-rooms. The only "means for the admission of pure air, or exit of poisoned air, is "by the opening of doors and windows. These, during much of "the time, especially in inclement seasons, must be kept closed, "thus compelling the inmates to inhale for hours a poison, the "effects of which are too evident in the blanched cheeks, dull "eyes, and complaints of headache, evidences of blood-poisoning "from carbonic acid and other injurious gases. There seems to

"be no excuse in this case, as the whole building was remodelled "and enlarged during the past year. Nor is this neglect the re- "sult of inexperience or insufficient information, for the Annual "Report of the Board of Education for 1866 contains a report by "the Assistant Superintendent, Mr. S. W. Seton, most admirably "written, clearly and intelligently showing the necessity and im- "portance of attention to this subject. He remarks: 'The sub- "'ject of ventilation is so vitally important, not only to the healthy "'state of our organic structure, but also to give force and effect "'to mental and intellectual action, as touching the whole train- "'ing of man, that I cannot refrain from once again alluding to "'it and in a still more serious manner. The destruction of the "'vitality of the air by the action of breathing, exhausting its "'oxygen and throwing out its poisonous carbonic acid gas, is not "'the only source of the vitiation and corruption of the atmos- "'phere in crowded assemblies; but the various excretions issuing "'through the pores of the skin largely contribute to impoverish "'and vitiate the surrounding atmosphere.' If anything more is "necessary to convince the most skeptical upon this point, a per- "sonal visit during the school sessions to any of those overcrowded "class-rooms would afford abundant evidence."

3. *Insufficient Methods of Heating.*—In the new schools and some of the older ones, furnaces are in use, but there are many heated entirely by stoves. The rooms heated by stoves with ever-varying degrees of temperature, at times, become oppressively hot; the close proximity of the children, seated upon rows of seats slightly elevated one above the other, from the front to the rear of the room, causes perspiration; the atmosphere becoming offensive and oppressive, the windows must be opened; a sudden draft of cold air rushes in, directly upon their heads; the consequence is, suddenly-checked perspiration, colds in the head, and, perhaps, pneumonia, or other inflammatory diseases. The scholars are confined in these class-rooms nearly five hours daily. If children suffer and become cachectic under the influence of badly-ventilated tenement houses, where they have free egress at any time, what must be the result of this long and daily confinement in these overcrowded, badly-ventilated and improperly heated class rooms. The Board of Education is endeavoring to correct these evils, and its intelligent officers are always ready to co-operate with the sanitary officers of this Board in measures for preserving the lives and promoting the health of the rising generation.

The vaccination of all the pupils of the public schools is of vital importance. From the reports of the Sanitary Inspectors it appears that four per cent. of the children examined had never been vaccinated or that the evidences of perfect vaccination were unsatisfactory. That the health of the pupils and of the entire population is endangered by this neglect is obvious, and no effort will be spared to secure a complete reform in this particular. It is a well-established fact that contagious or infectious diseases, such as measles, scarlatina, typhoid fever, varicella and even variola, are sometimes transmitted through the articles of clothing, which are hung in masses in the closets of the different class-rooms; and the proper isolation and ventilation of the outer clothing placed in these closets during school hours is worthy of the consideration of the officers of the public schools in this city.

The few complaints against the condition of the public schools in the city of Brooklyn have been referred to the Board of Education, and have received prompt attention. The overcrowded condition of many of the schools long since attracted the attention of the school authorities, and although many class-rooms have been closed, many of the school houses re-arranged and additional buildings hired for the accommodation of the children, there are several buildings in use which are entirely unfit for school purposes. It has frequently been impossible to secure the appropriate measures for the improvements required, but the sum of twenty-five thousand dollars has recently been secured for sewer connections with the school houses, and the last Legislature placed at the disposal of the Board of Education four hundred thousand dollars for additional buildings. In the schools of Brooklyn no child is admitted who does not give evidence of successful vaccination.

The Gas Nuisance.

A year ago the offensive odors emitted from the gas-houses were intolerable, and were the cause of general and constant complaint. The efforts made by the Board of Health to remedy this evil have resulted in diminishing materially the frequency of complaints. The streets are not so often filled with deleterious gases, and the inhabitants are not obliged to shut their windows so frequently in order to be able to breathe in comparative comfort. Yet the evil, in a mitigated form, continues, and, after short periods of rest, complaints come that it is renewed. The fact that there is an interval during which no one is offended, proves that the gas companies, by taking pains, can avoid being a public nuisance. Great care is necessary on their part not to overcharge the purifiers, and if they would use coals less loaded with sulphur, the probability is that there would be no difficulty. The Sanitary Committee has invited the citizens generally to aid in ascertaining which particular company is the offender, and this can only be done by tracing the odors, whenever perceived, up to the place from which they emanate. The Board has directed that two of its Inspectors should have this business in charge. It may seem surprising that this should be necessary, but such is the fact, because when either of the gas companies is complained of, it denies the charge and insists that the neighboring factory, if either, is the offending party. These companies, if they keep a proper supervision over their employés, must know whether the charges made against them are true, and it is to their discredit that they do not obviate all just cause of complaint. The Manhattan Gas Company has endeavored to render its works inoffensive by absorbing the refuse gases, but the New York Company, although complained of, has only made promises, which have not yet, to our knowledge, been fulfilled. There is a peculiar difficulty in dealing with the gas companies. On account of the necessity that exists of having our houses and streets lighted, we cannot entirely close their establishments. It might be supposed that the respectable men who have the management of these companies would feel, as good citizens, that it is their duty to respect the comfort and health of the inhabitants of this city by seeking efficient means to decompose or absorb the sulphurous gases which are still a nuisance. They have failed to do so, and many believe, whether justly or not, we do not undertake to say, that, shielding themselves behind the necessity the public has for light, they are indifferent to the complaints made against them. This gas nuisance should be abated, and if, in our efforts to make New York a pleasant and healthful city, we find that gas cannot be manufactured without being a nuisance, or if it can be, that the companies are so indifferent to the general health and comfort of our people, that they permit their establishment to be a continuing nuisance, then there will be only one effectual remedy left, and that is the removal, by act of the Legislature, of all gas-houses from the city limits.

Prostitution.

This Board was required by the last Legislature to communicate any information it possessed on this grave subject, and its opinion "as to the necessity and result of legislation which looked "to its more thorough restriction in the city of New York." The report of the Sanitary Committee upon this subject was approved by the Board and transmitted to the Legislature. This Report shows that venereal diseases are extremely common ; that they pervade all classes of the community, and are productive of various diseases which shorten life ; that the innocent, as well as the guilty, are affected by them, and that in some constitutions the poison can never be eradicated. It states that, at the present time, in New York at least 20,000 persons are affected with venereal diseases ; that the chief originators of these diseases are the prostitutes ; that it would be wise to extend to them medical care and especial supervision ; that according to the police reports there are 569 houses of prostitution and 90 houses of assignation in New York, and that the whole number of public prostitutes is 2,574. The moral view of the subject is briefly touched upon, and it is proposed :

1st. That all hospitals and dispensaries which receive pecuniary aid from the State shall be obliged to treat venereal diseases.

2d. That all keepers of houses of prostitution and assignation shall be registered.

3d. That when any woman gains admission she shall be at once reported to the police.

4th. That a hospital shall be established for prostitutes.

5th. That the houses and persons of all prostitutes shall be inspected.

The object of these suggestions is the eradication of the venereal disease, and the reasons for each of the measures proposed are given in the Report of the Sanitary Committee. (See Appendix F.)

Quarantine.

Although it is specially the duty and province of the Commissioners of Quarantine to present to the Legislature a summary of the results which have followed the measures which they have adopted during the past year under existing laws, and to suggest proper remedies for all deficiencies in the practical operation of the present system which may discover themselves; yet this

Board cannot forbear an allusion to a single point which touches its own operations and involves profoundly the sanitary interests of the Metropolitan Sanitary District. The two Commissions have co-operated for an object common to both, and have not been insensible to the dangers which have threatened, and that seriously, the health and commerce of this District. We allude to yellow fever—for the number of vessels arriving from infected ports during the past summer and autumn has exceeded by one-third that of any previous year. Unlike cholera, the dangers in this infection proceed not so much from patients suffering from it as from propagation by vessels allowed to come to the docks of the cities, or by transportation of the cargoes to the shore. Complete isolation of these cargoes is essential, and the sanitary authorities can never, by any degree of vigilance, afford that protection against imported disease which quarantine is designed to secure until warehouses are provided where merchandise arriving in infected vessels or coming from infected ports may be stored. In the absence of such provision, during the past summer, this Board, from the necessity of the case, permitted the landing and storage, at the Atlantic and Red Hook Docks, of all cotton from ports at which yellow fever was known to prevail, and from ports known to be infected, some of which cotton subsequently proved to be infected, and from the handling of which a laborer contracted the yellow fever and died. And yet, if the cotton from infected ports which has been stored in the District had generated an epidemic of yellow fever, the Quarantine and Health Commissions would have been held unjustly to a terrible responsibility. While ample provision has been made for our protection against small-pox, typhus and typhoid fevers, and by the legislation of the past two winters against cholera, in grants and appropriation for lands on Coney and Barren Islands, and for the erection of a hospital at West Bank, yet we would urge upon the Legislature the enactment of such laws as would render the system of quarantine more complete, and give full and ample protection to the sanitary and commercial interests of this Metropolitan District.

EPIDEMIC DISEASES.

1. *Cholera.*—Twenty-seven deaths from cholera have occurred during the past year in the city of New York, five in the city of Brooklyn, and eighteen at the military post in the harbor. The

disease has not excited public alarm and never approached the character of a general epidemic. The means used to combat it were the same as those employed in the year 1866. Wherever a case occurred, the Disinfecting Corps cleansed the buildings, or fumigated them with sulphur, and destroyed the clothing if it could not be disinfected by boiling water or by the permanganate of potash. The experience of another year has confirmed the opinion that active interference, by means of disinfectants, is the surest way to control and arrest this terrible disease. The details in respect to the cases of death by cholera may be found in the report of the Registrar of Vital Statistics (Appendix B.)

2. *Yellow Fever.*—The following are the only cases of death by this disease which are known to have occurred in the cities of New York and Brooklyn. On the 17th of August, a laborer named O'Neil, residing at No. 146 Cherry street, died of yellow fever. He had been employed in unloading sugar from the ship "Montreal," from Havana. He slept on board of this ship on the 8th and 9th; was attacked on the morning of the 12th; and died on the evening of the 17th.—A gentleman, aged 63, came from California by the Isthmus of Panama, and died of yellow fever at one of the hotels in the Fifth avenue.—A laborer, named Matthew Howard, was employed for several days at the Atlantic Docks in unloading and storing cotton. From the Atlantic Docks he went directly on board of a vessel from the West Indies, lying at Old Slip, to assist in discoarging a cargo of sugar, and immediately sickened, but walked home with assistance. This was on Saturday; on Sunday he vomited; on Wednesday the skin was yellow; on Thursday he vomited a black material (blood), from the nose and mouth; on Friday was sent to Blackwell's Island Hospital, and on Saturday died. The autopsy revealed the indications of yellow fever, and the body was buried in Potter's Field. In this case the disease was evidently contracted while removing cotton at the Atlantic Docks, which shows that some of the cotton stored there must have been infected. One death from pellow fever is reported by Deputy Registrar Stiles to have occurred in Bergen street, Brooklyn. In this case it was ascertained that the man had visited the Lower Quarantine, and, without permission, had boarded an infected vessel.

On the 7th of August, an Italian vessel, called the "Chiara," arrived from the Mediterranean, loaded with oranges and other fruits. After the cargo was discharged several of the crew sickened, and the vessel went to Newtown creek, where the three remaing seamen were attacked. The disease could not properly be called yellow fever, because there was no jaundice or fever; but there were bleeding gums and albuminous urine, which showed a disorganized condition of the blood. On September 17th, a workman in a glass-house, situated near to the dock where this vessel was moored, was taken with symptoms of yellow fever and died, and on the seventh day four others were attacked. This disease was different from any other malady that prevailed in the District, and according to the report of Dr. Stiles, the Deputy Registrar (Appendix B), the symptoms and post-mortem appearances resembled yellow fever.

3. *Typhoid Fever.*—About fifty cases occurred at the Institution for the Deaf and Dumb, in the following order: Sept. 12, 1866, a girl, who is supposed to have brought the disease with her when admitted to the Institution; Oct. 2, one case; Oct. 29, one; Nov. 6, four; Nov. 8, two; Nov. 9, twelve; Nov. 10, six; Nov. 11, three; Nov. 12, five; Nov. 13, eight; Nov. 14, one; Nov. 15, five cases. The existence of this fever was brought informally to the knowledge of this Board; the physician of the institution, whose duty it was to report it, having failed to do so, and his excuse that he wished to manage the disease himself, so as to avoid any public excitement against the Institution and its officers, was indefensible, and, as the result proved, unwise. Inspector Moreau Morris was directed to inspect the premises, and reported that the wash-house was in a filthy condition and that the ground underneath the floor was saturated with the water used in washing the bed-clothing, which was often very much soiled by the evacuations of the young pupils. The heating apparatus was in the same building and the effluvia were transmitted through the flues to the dormitories. The water-closets were offensive and not trapped, and were improperly washed and cleaned by means of the rain-water (of which the supply was insufficient), conveyed by lead pipes from a tank near the roof. The water in the tank was found to be very offensive, and as there was a scanty supply of drinking water, the children had used the water from this tank for that purpose. The inmates numbered about five hundred, and of these, four hundred and twenty were pupils. At the time of this inspection there were forty-four cases of fever. The Sanitary Superintendent and Engineer were directed to visit the Institution, and their examination confirmed all the statements of the Inspector in respect to its un-

healthy and neglected condition. This Board ordered that all the pupils should be removed until the building was cleansed and disinfected, and placed in a proper sanitary condition. The President of the Institution promised immediate compliance with these orders, and that none of the children should return until the Board was satisfied by inspection that all the necessary changes and improvements had been made. These facts in respect to the sanitary condition of this Asylum cannot be too deeply impressed upon the minds of all who have charge of similar institutions. A fine building, an elevated and airy position, and large rooms will not secure the health of the inmates if the drainage is neglected, the soil-pipes offensive, and the drinking water scanty or impure. Watchfulness in these particulars is a duty which directors and managers are apt to neglect; they should always anticipate danger where large numbers are gathered together, and be studiously attentive to the removal of all the causes of uncleanness which will aggravate disease in case of its occurrence. The physician of the Institution having grossly disobeyed the law, was prosecuted by the Board, and after suit brought, paid one hundred dollars as a penalty.

4. *Typhus Fever.*—The Reformatory, an institution for the reception of young girls found guilty of petty offences, is situated in Eighty-sixth street, between First and Second avenues, and is in charge of the Sisters of the Order of the Holy Angels. On the 20th of Oct., one of the inmates was seized with petechial fever, and during the next six days there were ten cases; Oct. 27, six cases; Oct. 28, eight cases; Oct. 31, ten cases. The disease was supposed to be introduced by the visitors who freely mingled with the inmates on reception days. The precautions taken by every one connected with the management, to render this institution salubrious, are worthy of commendation. There was no overcrowding, the water-closets and drains were in excellent order, and cleanliness universally prevailed. No effort was spared to arrest the disease. The inmates were removed to a farm in Westchester county, the straw beds were burned, the ticks repeatedly boiled, and the rooms cleaned and disinfected. This institution was attended by the same physician that had charge of the Institution for the Deaf and Dumb, and in this case, also, he neglected to report to the Board of Health.

EXPENDITURES.

Your attention is respectfully called to the annual report of the Treasurer of this Board, from which it appears that the total amount expended in New York during the year ending November 15, 1867, for Ordinary Expenses was $88,739 26, and the amount expended in Kings county during the same period was $31,207.63. For Extraordinary Expenses incurred during the prevalence of cholera in the year 1866, and liquidated and paid after the date of the last Annual Report, including disinfecting services, hospital expenses, rent of hospitals, fitting up and furnishing the same, and for orders executed under, and by direction of the Board, there has been paid, in the counties of New York and Kings, the sum of $51,114.61.

From the report of the Comptroller of the City of New York for the year 1865, it appears that the amount expended for sanitary purposes during that year was as follows:

City Inspector's Department, contingencies	$45,011 41
City Inspector's Salaries	144,116 48
Board of Health	6,425 27
Commissioners of Health—Salaries	9,848 00
	$205,401 16

During the years 1865 and 1867 no extraordinary epidemic prevailed in the city of New York; yet the expenses of the Health Department under the City authorities were $205,401.16, in 1865, while the expenses of the Metropolitan Board of Health for 1867 were only $88,739.26.

COMMISSIONER JOHN G. BERGEN.

During the past year this Board has lost one of its members by death, John G. Bergen, Esq., Police Commissioner, and by virtue of that office, a member of the Metropolitan Board of Health. His death occurred on the 18th day of July, 1867, and at a meeting held on the twentieth of that month, this Board, by a series of resolutions, expressed its appreciation of his worth and public spirit as a citizen, his fidelity as an official, and his unassuming modesty as a man. Fearless and faithful in the discharge of his duty, rigidly and wisely economical in the expenditure of the public money, possessing a well-balanced mind and discriminating judgment, and a long experience in public affairs, in the various positions to which he had been elected by his constituents, or appointed by the State authorities, Mr. Bergen promptly secured and permanently retained the confidence, respect, and good-will of his associates in this Board.

Respectfully submitted,

JACKSON S. SCHULTZ,

President.

Emmons Clark,

Secretary.

REPORT OF TREASURER.

To the Metropolitan Board of Health:

I have the honor to submit the enclosed detailed report of the Receipts and Disbursememts of the Board from the 16th day of November, 1866, to the 15th day of November, 1867, in compliance with section 19 of chapter 74, Laws of 1866.

It will be seen, on reference to the report, that the actual amount of money used by the Board, for its ordinary expenses for the year ending November 15, 1867, is as follows:

General Expenses:

Salaries	$37,150 39	
Contingent expenses	2,078 29	
Stationery and printing	11,097 30	
Advertising	2,050 65	
Law expenses	3,332 00	
Furnishing and fitting up	716 94	
Badges and emblems	20 00	
		$56,445 57
Proportion charged to city and county of New York	$46,484 59	
Proportion charged to Kings county	9,960 98	
		56,445 57

Expenses—City and County of New York:

Salaries	$42,454 67	
Proportion of general expenses ($\frac{14}{17}$)	46,484 59	
		88,739 26

Expenses—County of Kings:

Salaries	$20,375 66	
Contingent expenses	870 99	
Proportion of general expenses ($\frac{3}{17}$)	9,960 98	
		$31,207 63
Total amount used by the Board, for ordinary expenses, in New York and Kings counties		$119,946 89

The following sums were paid by the Board for disinfecting services, hospital expenses, rent of hospitals, fitting up and furnishing same, and for orders executed under and by direction of the Board, in the year 1866, and during the prevalence of cholera, viz:

General extraordinary expenses	$3,691 71	
Extraordinary expenses—N. Y. county	8,768 92	
“ “ Kings county	11,084 67	
Special expenses in New York Co., under chapter 837, Laws of 1866	27,569 31	
		$51,114 61
This amount has been used by the Board, under section 14, of chapter 74, Laws of 1866, for the execution of orders. This sum will ultimately be returned, as the several amounts paid for work done, by orders of the Board, are now by law made a lien upon the property		5,897 49

In 1866 the Legislature gave the Board the sum of $6,000 for the purpose of cleaning such streets as were not included in the street-cleaning contract. Of this amount the sum of $3,068 has been used during the year, leaving sufficient balance to pay for that service during the year 1867. In 1867 the sum of $5,000 was also appropriated for similar service, no portion of which sum has been expended.

BENJAMIN F. MANIERRE,
Treasurer.

NEW YORK, *November* 30, 1867.

Receipts.

Fund for New York County.

1867.			
Aug. 26.	Amount received from Comptroller (on account appropriation for 1867)	$40,000 00	
Nov. 19.	Amount received from Comptroller (balance for 1867)	34,876 47	
			$74,876 47

Fund for Kings County.

1867.			
Jan. 7.	Amount received from Kings Co. Treasurer (for 1866)	$22,486 27	
Jan. 7.	Amount received from Kings Co. Treasurer (for 1867)	25,123 53	
			47,609 80

General Expenses.

1867.			
Jan. 30.	Received from Metropolitan Board of Excise for services of clerks in Secretary's office, from organization of the Board to this date, as per statement	$4,400 00	
" "	Received from Metropolitan Board of Excise for proportion of bookkeeper's salary for 1866	800 00	
June 8.	Received from Metropolitan Board of Excise for services of clerks in Secretary's office for March, 1867	345 45	
			5,545 45

Contingent Expenses—Kings County.

	Received from Long Island Bone Laboratory company, for sums expended by the Board, removing offal from Kings county beach, from June 30, 1866, to November 15, 1867	594 25

Interest—New York County.

1866.		
Dec. 31.	Received from National Shoe and Leather bank for interest on balances,	$710 00

Date	Item	Amount	Total
1867.			
Oct. 31.	Received from National Shoe and Leather bank for interest on balances	$1,205 00	
			$1,915 00

Interest—Kings County.

Date	Item	Amount	Total
1866.			
Dec. 31.	Received from National Shoe and Leather bank for interest on balances,	$310 00	
1867.			
Oct. 31.	Received from National Shoe and Leather bank for interest on balances	715 90	
			1,025 90

Fund for Special Expenses in New York (under chapter 837, *Laws of* 1866.)

Date	Item	Total
1867.		
Jan. 10.	Received for one bay horse, sold	250 00

Fund for Extraordinary Expenses in Kings County.

Date	Item	Amount	Total
1867.			
Jan. 7.	Received from Kings County Treasurer, am't appropriated for 1866	$65,000 00	
Mar. 5.	Received from Commissioners Crane and Bergen, committee, as per following statement, viz.:	254 59	
			65,254 59

Total amount placed in the hands of committee for extraordinary expenses, per resolution of the Board in 1866,	$15,000 00
Sums expended, as per vouchers	14,745 41
Balance	$254 59

Fund to be expended for work done in Kings County under orders of the Board, made by virtue of section 14, *chapter* 74, *Laws of* 1866, *to be paid by, or recovered back from, any person or corporation.*

Date	Item	Total
1867.		
Jan. 7.	Received from Kings County Treasurer	15,000 00

Fund to be expended for work done in New York County, under orders of the Board, made by virtue of section 14, of chapter 74, Laws of 1866, to be paid by, or recovered back from, any person or corporation.

1867.			
Nov. 15.	Amount returned to E. B. Dalton, Sanitary Superintendent		$500 00

Fund for cleaning streets in New York City, under chap. 876, Laws of 1866.

1867.			
Oct. 3.	Amount received from Comptroller, as per tax levy of 1867		5,000 00

Fines and Penalties—New York County.

1867.			
Mar. 5.	Received from Dr. L. A. Rodenstein, for violations	$100 00	
	Received from Court of Sessions, for fine imposed on Peter Turner for violation, January 31st	10 00	
			110 00

Fines and Penalties—Kings County.

1867.			
June 8.	Received from Justice Buckley, for violations	214 40	
July 9.	Received form Justice Dailey, for violations	23 00	
July 10.	Received from Justice Buckley, for violations	230 00	
Sept. 28.	Received from Justice Buckley, for violations	101 00	
			568 00

Town of Flushing.

1867.			
Jan. 3.	Amount received from supervisor		244 50

Temporary Loan Account.

1867.			
Jan. 12.	Amount advanced by National Shoe and Leather bank for contingent expenses in the town of Newtown	$84 50	
Oct. 2.	Amount advanced by National Shoe and Leather bank for		

	contingent expenses in the town of Newtown	$30 89	
Oct. 3.	Amount advanced by National Shoe and Leather bank for contingent expenses in town Rye	8 25	
			$123 64
	Total receipts		$218,617 60

Recapitulation.

Fund for New York county	$74,876 47	
Kings county	47,609 80	
General expenses	5,545 45	
Contingent expenses—Kings county	594 25	
Interest—New York county	1,915 00	
Kings county	1,025 90	
Fund for special expenses in New York county	250 00	
Fund for extraordinary expenses in Kings county	65,254 59	
Fund for expenses under section 14 of chapter 74, Laws of 1866, for Kings county,	15,000 00	
Fund for expenses under section 12 of chapter 74, Laws of 1866, for New York co.,	500 00	
Fund for cleaning streets in New York city, under chapter 876, Laws of 1866.....	5,000 00	
Fines and penalties—New York county..	110 00	
do Kings county......	568 00	
Town of Flushing	244 50	
Temporary loan account	123 64	
		$218,617 60

DISBURSEMENTS.

GENERAL EXPENSES.

Salaries.

Treasurer:

Benjamin F. Manierre, salary from September 1, 1866, to October 1, 1867, at $500..............	$541 66

Health Officer:		
John Swinburne, salary from September 1, 1866, to October 1, 1867, at $500	$541 66	
Less deductions for absence at meetings	20 00	$521 66
Secretary:		
Emmons Clark, salary from November 1, 1866, to November 1, 1867		3,000 00
Counsel:		
D. B. Eaton, salary from December 1, 1866, to October 1, 1867, at $5,000		4,166 66
Attorney:		
George Bliss, jr., salary from November 21, 1866, to November 1, 1867, at $3,000		2,833 33
Sanitary Superintendent:		
E. B. Dalton, salary from November 1, 1866, to May 24, 1867, at $4,000		2,258 05
E. B. Dalton, salary from May 25, 1867, to November 1, 1867, $5,000		2,177 40
Engineer:		
W. E. Worthen, salary from November 1, 1866, to November 30, 1866, at $4,000		333 33
W. E. Worthen, salary from January 1, 1867, to November 1, 1867, at $4,000		3,333 33
Corresponding Secretary:		
Elisha Harris, salary from November 1, 1866, to May 1, 1867, at $500		249 99
Elisha Harris, salary from May 1, 1867, to November 1, 1867, at $1,000		499 99
Chief Clerk:		
Norman A. Beach, salary from May 1 to November 1, 1867, at $2,400		1,200 00
Treasurer's Bookkeeper:		
John Norton, salary from November 1, 1866, to May 1, 1867, at $1,800		$600 00
John Norton, salary from May 1, 1867, to November 1, 1867, at $2,400		1,200 00
Clerks in Secretary's Office:		
Pay roll for November, 1866		600 00

Pay roll for	December, 1866	$600	00
do	January, 1867	983	33
do	February, 1867	983	33
do	March, 1867	983	34
do	April, 1867	633	33
do	May, 1867	625	00
do	June, 1867	708	33
do	July, 1867	708	34
do	August, 1867	708	33
do	September, 1867	708	33
do	October, 1867	783	34
Clerks in Sanitary Superintendent's Office:			
Pay roll for	November, 1866	175	00
do	December, 1866	175	00
do	January, 1867	175	00
do	February, 1867	175	00
do	March, 1867	175	00
do	April, 1868	275	00
do	May, 1867	400	00
do	June, 1867	400	00
do	July, 1867	400	00
do	August, 1867	400	00
do	September, 1867	400	00
do	October, 1867	400	00
Janitor and Messenger:			
Pay roll for	November, 1866	100	00
do	December, 1866	100	00
do	January, 1867	100	00
do	February, 1867	100	00
do	March, 1867	100	00
do	April, 1867	100	00
do	May, 1867	126	66
do	June, 1867	126	67
do	July, 1867	126	66
do	August, 1867	126	67
do	September, 1867	126	67
do	October, 1867	126	66
		$37,150	39

Contingent Expenses.

1866.			
Nov.	30.	S. Livingston	$9 04
	30.	Baker, Voorhies & Co	25 00
	30.	New York Post-office	50 00
	30.	Maria Lyon	34 50
	30.	Mary Connelly	14 00
Dec.	10.	John Bowne	20 09
	10.	C. Golderman, Jr	31 82
	10.	S. Livingston	9 04
	10.	Maria Lyon	34 75
	10.	Mary Connelly	14 00
1867.			
Jan.	5.	C. Golderman, Jr	23 60
	5.	John Bowne	18 67
	5.	P. Nichols & Co	11 30
	11.	W. E. Worthen	23 36
	11.	H. H. Casey	10 35
	11.	John Brady	11 18
	25.	Horace Strang	6 75
	25.	New York Post-office	50 00
	31.	Maria Lyon	34 75
	31.	Mary Connelly	14 00
	31.	C. Golderman, Jr	19 53
	31.	M. Mackin	10 16
	31.	H. H. Casey	11 49
Feb.	28.	Maria Lyon	34 00
	28.	Mary Connelly	14 00
March	2.	C. Golderman, Jr	26 32
	2.	Benjamin Pike's Son	5 50
	15.	John Brady	9 28
	15.	M. Mackin	5 52
	15.	Wm. Wood & Co	5 50
	30.	Maria Lyon	34 75
	30.	Mary Connelly	14 00
	30.	H. H. Casey	2 00
April	5.	M. Mackin	6 01
	5.	C. Golderman, Jr	26 12
	30.	Maria Lyon	34 50
	30.	Mary Connelly	14 00

May	4.	John Brady	$11	22
	13.	New York Post-office	50	00
	13.	John Norton	350	00
	17.	C. Golderman, Jr	39	08
	17.	M. Mackin	5	88
	17.	John Bowne	13	10
	31.	Maria Lyon	35	00
	31.	Mary Connelly	14	00
June	3.	H. H. Casey	10	75
	4.	Emmons Clark	29	05
	6.	P. Nichols & Co	10	86
	6.	C. Golderman, Jr	24	99
	6.	D. B. Eaton	121	49
	15.	M. Mackin	6	00
	15.	John F. Trow	20	00
	15.	Thomas Clark	7	00
	29.	C. Golderman, Jr	20	87
	29.	Maria Lyon	35	00
	29.	Mary Connelly	14	00
July	10.	M. Mackin	5	88
	12.	Bailliere Bros	11	80
	12.	Adolf Plaettner	15	11
	12.	John Brady	13	12
	31.	Maria Lyon	35	00
	31.	Mary Connelly	14	00
Aug.	2.	John Bowne	7	62
	3.	P. Nichols & Co	10	03
	7.	M. Mackin	6	00
	28.	C. Golderman, Jr	34	80
	31.	Maria Lyon	35	00
	31.	Mary Connelly	14	00
Sept.	4.	M. Mackin	6	00
	11.	New York Post-office	50	00
	20.	Dixon, Clarks & Hallett	9	06
	20.	John Brady	17	46
	20.	H. H. Casey	10	45
	20.	C. Golderman, Jr	22	00
	20.	Maria Lyon	35	00
	20.	Mary Connelly	14	00
Oct.	2.	M. Mackin	6	00
	7.	P. Nichols & Co	9	97

Oct.	24.	Keyser & Co	$39	13
	31.	Maria Lyon	35	00
	31.	Mary Connelly	14	00
Nov.	7.	John Brady	15	54
	8.	New York Post-office	50	00
	9.	H. H. Casey	5	75
			$2,078	29

Stationery and Printing.

1867.				
Jan.	25.	Francis & Loutrel	$969	95
	25.	Bergen & Tripp	1,105	90
	25.	J. W. Ammerman	62	00
Feb.	23.	C. S. Westcott & Co	1,788	87
March	2.	Endicott & Co	216	68
	2.	Bergen & Tripp	139	09
	15.	W. C. Rogers & Co	1,078	25
	15.	Francis & Loutrel	313	00
	30.	C. S. Westcott & Co	112	95
April	5.	W. C. Rogers & Co	988	85
May	4.	W. C. Rogers & Co	346	00
	4.	Bergen & Tripp	110	00
	17.	Francis & Loutrel	234	98
June	3.	J. W. Ammerman	121	70
	3.	D. Appleton & Co	64	00
	6.	W. C. Rogers & Co	138	50
	6.	Sandford, Harroun & Co	15	75
	6.	D. Appleton & Co	24	50
	6.	Francis & Loutrel	141	25
	29.	W. C. Rogers & Co	160	03
July	10.	W. C. Rogers & Co	202	00
	10.	Francis & Loutrel	105	75
	23.	Francis & Loutrel	103	00
	26.	Bergen & Tripp	923	70
Aug.	2.	C. S. Westcott & Co	361	75
	6.	Sanford, Harroun & Co	134	00
	6.	M. B. Brown & Co	23	50
	8.	M. B. Brown & Co	23	76
Sept.	20.	W. C. Rogers & Co	532	57
	20.	Sanford, Harroun & Co	175	00
	20.	Francis & Loutrel	58	20

Oct.	3.	R. M. Whiting, Jr.	$71 35
	31.	W. C. Rogers & Co	142 87
Nov.	7.	R. M. Whiting, Jr.	14 00
	9.	Francis & Loutrel	15 00
	9.	Sanford, Harroun & Co	22 50
	15.	R. M. Whiting, Jr.	46 60
	15.	Francis & Loutrel	9 50
			$11,097 30

Advertising.

1866.			
Dec.	21.	New York Democrat	$5 25
1867.			
Jan.	5.	New York Tribune	5 40
	11.	New York Staats Zeitung	2 50
March	30.	New York Herald	12 00
May	17.	Commercial Advertiser Association	12 00
June	3.	W. C. Bryant & Co	9 90
	6.	W. C. Bryant & Co	17 10
	29.	Commercial Advertiser Association	36 00
July	13.	Brooklyn Daily Union	23 40
Aug.	2.	W. C. Bryant & Co	13 50
	3.	Tribune Association	88 60
	28.	Brooklyn Daily Union	325 00
	28.	W. C. Bryant & Co	750 00
	28.	New York Times	750 00
			$2,050 65

Law Expenses.

1867.			
May	17.	D. B. Mellish	$332 00
	17.	Charles Tracy	3,000 00
			$3,232 00

Furnishing and Fitting up.

1866.			
Dec.	8.	Keyser & Co	$61 63
1867.			
Jan.	31.	W. & J. Sloane	20 50
March	2.	W. & J. Sloane	11 89

March	15.	G. W. Sneden & Campbell	$26 50
	15.	Valentine & Butler	7 50
	15.	Keyser & Co	10 50
May	24.	H. H. Casey	17 70
Aug.	31.	Robt. Paton	317 00
Nov.	9.	Louis Carpenter	243 72
			$716 94

Badges and Emblems.

1867.			
July	13.	A. Demarest	$20 00

NEW YORK COUNTY.

Salaries.

Commissioners:		
Jackson S. Schultz, salary from September 1, 1866, to October 1, 1867, at $2,500		$2,708 33
John O. Stone, salary from September 1, 1866, to October 1, 1867, at $2,500		2,708 33
Willard Parker, salary from September 1, 1866, to October 1, 1867, at $2,500	$2,708 33	
Less deductions for absence at meeting	10 00	
		2,698 33
Thomas C. Acton, salary from September 1, 1866, to October 1, 1867, at $500		541 66
Joseph S. Bosworth, salary from September 1, 1866, to October 1, 1867, at $500		541 66
Benjamin F. Manierre, salary from September 1, 1866, to October 1, 1867, at $500		541 67
Sanitary Inspectors:		
Salaries of eight inspectors for November, 1866		800 00
Salaries of nine inspectors for December, 1866		900 00
Services of one inspector four days in December, 1866		13 33
Salary of ten inspectors for January, 1867		1,000 00
do do February, 1867		1,000 00
do do March, 1867		1,000 00
do do April, 1867		1,000 00
Salaries of ten inspectors from May 1, to May 24th, inclusive		774 20

Salaries of nine inspectors from May 25 to May 31, inclusive at $1,800	$304 83
Salary of Inspector Paine from May 25 to May 31, inclusive, at $2,400	45 16
Salaries of nine inspectors for June, 1867	1,350 00
Salary of Inspector Paine for June, 1867	200 00
Salary of nine inspectors for July, 1867	1,350 00
Salary of Inspector Paine for July, 1867	200 00
Salaries of nine inspectors for August, 1867	1,350 00
Salary of Inspector Paine for August, 1867	200 00
Salaries of nine inspectors for September, 1867	1,350 00
Salary of Inspector Paine for September, 1867	200 00
Salaries of nine inspectors for October, 1867	1,350 00
Salary of Inspector Paine for October, 1867	200 00
Assistant Inspectors:	
Salaries of Drs. Jackson and Ketchum for June, 1867	113 33
Salaries of Drs. Jackson and Ketchum for July, 1867	200 00
Salaries of Drs. Jackson and Ketchum for August, 1867	200 00
Salary of Dr. Jackson for September, 1867	100 00
Salary of Dr. Jackson for October, 1867	100 00
Registrar of Vital Statistics:	
Elisha Harris, salary from November 1, 1866, to May 1, 1867, at $2,500	1,250 00
Elisha Harris, salary from May 1, 1867, to November 1, 1867, at $3,500	1,750 00
Clerks to Registrar of Vital Statistics:	
Pay roll for November, 1866	600 00
do December, 1866	600 00
do January, 1867	973 33
do February, 1867	693 33
do March, 1867	693 33
do April, 1867	693 33
do May, 1867	1,630 83
do June, 1867	1,083 33
do July, 1867	1,083 32
do August, 1867	1,083 34
do September, 1867	1,083 34
do October, 1867	1,096 34

Complaint Clerk:		
George B. Bosworth, salary from November 1, 1866, to October 10, 1867, at $1,800		$1,700 00
Clerk in Sanitary Police Office:		
Bowen G. Lord, Jr., salary from November 1, 1867, to November 1, 1867		1,200 00
		$42,254 67

KINGS COUNTY.

Salaries.

Commissioners:		
James Crane, salary from September 1, 1866, to October 1, 1867, at $2,500		$2,708 33
John G. Bergen, salary from September 1, 1866, to July 18, 1867, at $500	$441 66	
Less deductions for absence at meetings	16 00	
		425 66
Assistant Sanitary Superindent:		
J. T. Conkling, salary from November 1, 1866, to May 24, 1867, at $3,000		1,693 55
J. T. Conkling, salary from May 25, 1867, to November 1, 1867, at $3,500		1,524 19
Sanitary Inspectors:		
Salaries of six inspectors, for November, 1866		$600 00
Salaries of five inspectors, for December, 1866		500 00
Salaries of five inspectors, for January, 1867		500 00
Salaries of four inspectors, for February, 1867		400 00
Salaries of five inspectors, for March, 1867		436 66
Salaries of five inspectors, for April, 1867		500 00
Salaries of five inspectors, from May 1 to May 24, 1867		387 10
Salaries of five inspectors, from May 25 to May 31, 1867, at $1,800		169 35
Salaries of five inspectors, for June, 1867		750 00
Salaries of five inspectors, for July, 1867		750 00
Salaries of five inspectors, for August, 1867		750 00
Salaries of five inspectors, for September, 1867		750 00
Salaries of five inspectors, for October, 1867		750 00
Assistant Inspectors:		
A. C. Hallam, services for seven days in June, 1866		23 33

J. L. H. Elmendorf, services for ten days in June, 1866		$33 33
A. C. Hallam, services from July 1, 1867, to November 1, 1867		400 00
J. L. H. Elmendorf, services from July 1, 1867, to November 1, 1867		400 00
Deputy Registrar of Vital Statistics:		
R. Cresson Stiles, salary from November 1, 1866, to May 1, 1867, at $1,800		900 00
R. Cresson Stiles, salary from May 1 to November 1, 1867, at $2,400		1,200 00
Clerks to Assistant Sanitary Superintendent:		
Pay roll for	November, 1866	258 33
do	December, 1866	258 33
do	January, 1867	258 33
do	February, 1867	258 33
do	March, 1867	258 34
do	April, 1867	258 33
do	May, 1867	350 00
do	June, 1867	350 00
do	July, 1867	402 06
do	August, 1867	433 33
do	September, 1867	388 78
do	October, 1867	350 00
		$20,375 66

Contingent Expenses.

1867.			
Feb.	23.	T. K. Horton & Co.	$2 00
March	30.	John McMahon	12 00
May	17.	J. T. Conkling	10 00
	24.	John Irving	3 50
June	29.	J. T. Conkling	6 00
	29.	Francis Swift	70 00
July	10.	John T. Van Pelt	18 75
	10.	R. M. Whiting, Jr.	6 50
	10.	Horace Strang	12 00
	15.	John T. Van Pelt	9 00
	22.	Francis Swift	15 00
	27.	John T. Van Pelt	11 00

July	31.	J. T. Conkling	$6 00
Aug.	3.	John T. Van Pelt	13 00
	14.	Thomas Adema	88 00
	14.	John T. Van Pelt	12 00
	21.	John T. Van Pelt	13 00
	28.	J. E. Smith & Son	114 50
	28.	J. T. Conkling	13 00
Sept.	4.	John T. Van Pelt	17 75
	14.	John T. Van Pelt	12 75
	20.	John B. Holland	26 00
	20.	John T. Van Pelt	9 00
	21.	F. Wardell	27 00
	30.	John G. Cozine	27 00
Oct.	1.	J. S. Stryker	6 24
	1.	John T. Van Pelt	16 00
	2.	Horace Strang	9 00
	10.	J. T. Conkling	10 00
	16.	John T. Van Pelt	16 00
	22.	John B. Holland	55 00
	23.	John G. Cozine	50 00
	26.	John T. Van Pelt	18 00
Nov.	1.	John B. Holland	23 00
	1.	John G. Cozine	25 00
	7.	F. Wardell	76 00
	15.	John T. Van Pelt	12 00
			$870 99

EXTRAORDINARY EXPENSES—GENERAL.

Miscellaneous Expenses.

1866.			
Nov.	17.	Isaac W. Haff, taking affidavits	$32 00
	30.	Francis & Loutrel, printing Special Orders	548 64
	30.	Sanford, Harroun & Co., printing Special Orders	25 40
	30.	Bergen & Tripp, printing Special Orders,	129 00
	30.	Richard Hunt, supplies for police at Seguin's Point	17 50

Nov.	30.	J. W. Amerman, law printing	$244 30
Dec.	8.	Keyser & Co., executing Special Order	23 16
	10.	New York Times, advertising	4 40
	10.	Brooklyn Daily Union, advertising	25 80
	21.	Bergen & Tripp, law printing	316 39
	31.	S. C. Hawley, taking testimony	416 66
			$1,783 25

Law Expenses.

1866.			
Nov.	30.	D. B. Eaton	$1,170 12
	30.	D. B Mellish	192 50
			1,362 62

Special Clerk Hire.

1866.			
Nov.	30.	Pay roll for November, 1866	$383 34
	30.	Pay roll for December, 1866	162 50
			$545 84

EXTRAORDINARY EXPENSES—NEW YORK COUNTY.

Miscellaneous Expenses..

1866.			
Nov.	16.	Keyser & Co., executing special orders in time of cholera	$1,095 84
	30.	James Ingram & Son, executing special orders in time of cholera	168 53
Dec.	10.	Horatio Paine, medicines, etc.	10 87
	10.	E. B. Dalton, removing horse	1 50
	10.	Wilson & Shields, horse hire	35 00
	22.	Keyser & Co., executing special orders in time of cholera	958 50
	29.	Keyser & Co., executing special orders in time of cholera	4,700 00
			$6,970 24

Hospital Expenses.

1866.			
Nov.	30.	Edmund Bloomer, attendant	$60 00
	30.	John Gannon, attendant	22 50
	30.	Thomas Butcher, attendant	33 70
	30.	Edmund Bloomer, attendant	4 45
	30.	Croton Aqueduct Department, water for Hospitals	268 40
	30.	Dixon, Clarks & Hallett, medicines	1 35
	30.	James A. Christie, sundries	64 00
Dec.	10.	Edmund Bloomer, attendant	10 00
	10.	W. H. Miles, horse hire	4 00
	10.	M. Buckman & Co., coal	31 50
	21.	New York Gas-Light Co., gas for Hospitals,	135 80
			$635 70

Disinfecting Expenses.

1866.			
Nov.	30.	Pay roll of laborers	$220 00
	30.	M. C. Rich, lime	1 00
	30.	Conway & McFarland, sundries	12 00
	30.	Mechanics' Mutual Building Material Association, lime	9 48
	30.	Ezekiel Palmer, sundries	28 50
			$270 98

Special Clerk Hire.

1866.			
Nov.	30.	Pay roll for November, 1866	$160 00
	30.	Pay roll for December, 1866	532 00
			$692 00

Assistant Inspectors.

1866.			
Nov.	30.	Pay roll for November, 1866	$200 00

EXTRAORDINARY EXPENSES—KINGS COUNTY.

Miscellaneous Expenses.

1866.			
Nov.	30.	Keyser & Co., executing orders in time of cholera	$383 81

Dec.	15.	Keyser & Co., executing orders in time of cholera	$998 50
	18.	Edward Freel, executing orders in time of cholera	2,932 03
	21.	W. H. McMannus, clerical services	110 00
	31.	G. F. Lewis, clerical services	150 00
1867.			
April	30.	Keyser & Co., work done in 1866, executing orders in time of cholera	661 83
			$5,236 17

Hospital Expenses.

1866.			
Nov.	22.	J. E. Smith & Son, undertakers' bill	$134 50
1867.			
May	1.	Samuel R. St. John, John B. Stratton, and Jarvis Johnson, rent of Hospital in 1866	5,000 00
			$5,134 50

Street Cleaning.

1866.			
Dec.	10.	James Gaffney, work on streets in time of cholera	$192 00
	10.	Chas. O'Rorke, work on streets in time of cholera	222 00
	21.	Thomas Clyne, work on streets in time of cholera	300 00
			$714 00

SPECIAL EXPENSES IN NEW YORK COUNTY.

(*See Chapter* 837, *Laws of* 1866.)

1866.			
Dec.	31.	Salaries of employés in Disinfectant Department, for this month	$220 00
	31.	Salaries of special clerks, for this month, as per pay roll	543 33
1867.			
Jan.	4.	James Eldrige, coach hire	4 00

Jan.	5.	James A. Christie, disinfecting expenses	$5	54
	5.	E. P. Clark, sundries	5	95
	11.	John F. Trow & Co., street directories	10	00
	11.	Seaich & Hulse, horse-keeping	35	00
	11.	Wilson & Shields, horse-keeping	35	00
	31.	Pay roll of employés in Disfectant Department, for this month	380	00
	31.	Keyser & Co., executing special orders, in 1866, in time of cholera	772	85
Feb.	23.	James A. Smith, disinfecting expenses	4	71
	23.	E. G. Janeway, medical services	150	00
	23.	Wilson & Shields, horse-keeping	35	00
	28.	Pay roll of employés in Disinfectant Department	320	00
March	2.	John Conway, horse-shoeing	11	25
	2.	Wilson & Shields, horse-keeping	35	00
	2.	James A. Christie, disinfecting expenses	5	95
	30.	Pay roll, Disinfectant Department	320	00
April	5.	Wilson & Shields, horse-keeping	27	00
	5.	Betts, Nichols & Co., sundries	5	50
	5.	Joshua Dyson, horse-feed	13	00
	5.	Walter Barclay, sundries	14	90
	5.	James A. Christie, disinfecting expenses	236	36
	27.	Keyser & Co., labor and materials, executing orders in 1866, in time of cholera	9,498	30
	30.	Pay roll, Disinfectant Department	220	00
May	4.	Frank Ashe, sundries	11	68
	15.	Betts, Nichols & Co., sundries	2	75
	17.	Walter Barclay, sundries	37	69
	17.	James A. Christie, disinfecting expenses	11	93
	17.	William S. Carman, rent of hospitals in 1866	800	00
	17.	J. H. Welsh, rent of hospitals in 1866	2,200	00
	17.	Isaac T. Smith, rent of hospitals in 1866	1,000	00
	17.	Joshua Dyson; horse-feed	41	42
	17.	Wm. H. Wilson, harness	65	75
	24.	New York Gas Light Co.	14	52
	25.	J. P. Clancy, labor and materials, executing orders in 1866, in time of cholera	497	35
	29.	Wm. McRoberts, 2 horses	600	00
	31.	R. A. Smith, wagon	250	00

May	31.	Pay roll, Disinfectant Department	$325 00
June	3.	John L. Keables, wagon	250 00
	3.	A. Plaettner, sundries	22 00
	14.	Henry Miller, sundries	10 00
	14.	Labor and Aid Association, sundries	52 65
	29.	J. L. & D. S. Riker, disinfectants	1,514 11
	29.	Pay roll, Disinfectant Department	125 00
July	9.	George W. Wightman, expenses in case of Dr. Beakley	200 40
	17.	R. S. Satterlee, medicines for hospitals in 1866	1,380 42
	22.	A. Howell, carpenter work at Disinfectant Depot	387 60
	22.	Wm. H. Wilson, harness	172 75
	22.	John L. Keables, repairing wagons	191 50
	31.	Pay roll, Disinfectant Department	125 00
Aug.	2.	James H. Christie, disinfecting expenses,	12 50
	28.	New York Gas Light Co	11 04
	31.	Pay roll, Disinfectant Department	125 00
Sept.	13.	Keyser & Co., executing special orders in 1866, in time of cholera	400 00
	31.	Pay roll, Disinfectant Department	125 00
Oct.	2.	James Ingram & Son, labor and materials, executing orders in 1866, in time of cholera	1,724 57
	3.	R. C. Brown, executing orders in 1866, in time of cholera	1,524 04
	7.	James Hubbard, horse-keeping	74 00
	31.	Pay roll, Disinfectant Department	125 00
	31.	John D. Peck, two months' services as Special Clerk	250 00
			$27,569 31

Funds expended for work done in New York County, under orders of the Board, made by virtue of section 14, *of chapter* 74, *Laws of* 1866, "*to be paid by, or recovered back from any person or corporation.*"

1867.

June	2.	Advanced E. B. Dalton, Sanitary Superintendent, for the purpose of executing orders of the Board, referred to him	$1,000 00

July	18.	Advanced E. B. Dalton, Sanitary Superintendent, for the purpose of executing orders of the board, referred to him	$1,000	00
Sept.	30.	Advanced E. B. Dalton, Sanitary Superintendent, for the purpose of executing orders of the Board, referred to him	1,000	00
Oct.	31.	Advanced E. B. Dalton, Sanitary Superintendent, for the purpose of executing orders of the Board, referred to him	200	00
Nov.	1.	James Ingram & Son, materials and labor, executing orders	1,002	05
	9.	R. C. Brown, materials and labor, executing orders	908	94
	9.	Keyser & Co., materials and labor, executing orders	730	90
	9.	John Barnes, materials and labor, executing orders	55	60
			$5,897	49

Cleaning streets (*not included in contract*) *in New York City, under chapter* 876, *Laws of* 1866.

1866.				
Dec.	24.	Thomas Fealey, work in 12th Precinct	$384	00
1867.				
Jan.	12.	Thomas Fealey, work in 12th Precinct	272	00
July	16.	Thomas Fealey, work in 12th, 30th and 31st Precincts	800	00
Aug.	7.	Thomas Fealey, work in 12th Precinct	416	00
Sept.	4.	Thomas Fealey, work in 12th Precinct	412	00
Oct.	12.	Thomas Fealey, work in 12th Precinct	400	00
Nov.	14.	Thomas Fealey, work in 12th Precinct	384	00
			$3,068	00

Town of Flushing.

1867.				
Jan.	3.	Dr. James L. Hicks, for services as assistant inspector in 1866	$244	50

Town of Newtown.

1867.			
Jan.	12.	John C. Provost, lime for disinfecting	$82 50
	12.	C. S. Whitehead, medicines	2 00
Oct.	2.	James Ingram & Son, materials and labor, executing order No. 970	30 89
			$115 39

Town of Rye.

1867.			
Oct.	3.	Purdy Slater, serving notices	$8 25

Loan Account.

1867.			
Mar.	18.	National Shoe and Leather Bank, in payment of note of the Board, dated Nov. 15, 1866, at four months	$15,000 00
	20.	National Shoe and Leather Bank, in payment of note of the Board, dated Sept. 17, 1866, at six months	25,000 00
April	23.	National Shoe and Leather Bank, in payment of note of the Board, dated June 20, 1866, at ten months	23,000 00
			$63,000 00

Total Disbursements $243,395 13

RECAPITULATION.

General Expenses :		
Salaries	$37,150 39	
Contingent Expenses	2,078 29	
Stationery and Printing	11,097 30	
Advertising	2,050 65	
Law Expenses	3,332 00	
Furnishing and Fitting up	716 94	
Badges and Emblems	20 00	
		$56,445 57
New York County :		
Salaries		42,254 67
Kings County :		
Salaries	$20,375 66	
Contingent Expenses	870 99	
		21,246 65

Extraordinary Expenses, General	$3,691 71	
Extraordinary Expenses, New York Co.	8,768 92	
Extraordinary Expenses, Kings County,	11,084 67	
Special Expenses, New York County	27,569 31	
Funds advanced for the purpose of executing orders under section 14, chap. 74, Laws of 1866, to be recovered back,	5,897 49	
Cleaning streets, not included in contract,	3,068 00	
Town of Flushing	244 50	
Town of Newtown	115 39	
Town of Rye	8 25	
Loan account	63,000 00	
		$243,395 13
Balance on hand, November 15, 1866, as per Report	$99,233 40	
Total receipts from November 15, 1866, to November 15, 1867	218,617 60	
		317,851 00
Total disbursements	$243,395 13	
Balance on hand	74,455 87	
		317,851 00

BENJAMIN F. MANIERRE,
November 30, 1867. *Treasurer.*

Metropolitan Sanitary District, ss.:

Benjamin F Manierre, being duly sworn, doth depose and say that the accompanying report contains a detailed statement of all moneys received and paid out by the "Metropolitan Board of Health," and a "detailed statement of the manner of expenditures" of such money, from the sixteenth day of November, 1866, to the fifteenth day of November, 1867, and further saith not.

BENJAMIN F. MANIERRE.

Sworn before me this 19th
day of December, 1867.

D. B. Hasbrouck,
Notary Public.

The undersigned Commissioners, Auditing Committee of the Board, have examined the foregoing accounts of the Treasurer and found them to be correct in every particular.

GEORGE B. LINCOLN,
JOHN O. STONE,
January 9, 1868. JOHN SWINBURNE.

APPENDIX.

"A."

REPORT OF THE SANITARY SUPERINTENDENT.

Office of Sanitary Superintendent, Metropolitan
Board of Health, New York, *Nov. 1st*, 1867.

To the Secretary of the Metropolitan Board of Health:

I beg respectfully to submit the following report of the duties performed by the Sanitary Inspectors, and other officers and employés of the Board, under my control, and by myself, during the past year.

The subjects to which attention has been directed have been essentially the same as during the previous year. The plan of organization, both as regards officers and employés, which proved successful during 1866, has been retained, and the same discipline preserved.

One conspicuous exception, however, deserves prominent mention. While, during the spring, summer and autumn of last year, the advent and persistent prevalence of the epidemic influence of cholera required constant attention and severe labor on the part of the department, and necessitated the temporary appointment of a large number of assistants, the past year shows no record of such an emergency. The Sanitary District has not only been free from any general epidemic, but has enjoyed an immunity from disease, which, judging not only from the reports of the officers of the Board, but no less from the testimony of all physicians and others, capable of obtaining accurate information on the subject, is unparalleled in its history, especially as regards the cities of New York and Brooklyn, for many years. This good fortune, while it has obviated the necessity for so large an organization, has enabled the regular corps of officers to perfect the investigation of many subjects requiring permanent reform, which was last year, of necessity, but imperfectly carried out.

On November 1st, 1866, the corps of Inspectors was on the basis prescribed by law for ordinary times, viz: ten (10) for the city of New York and five (5) for Brooklyn. Since that time three (3) vacancies have occurred—two in Brooklyn, one by death, and one by resignation; in New York one by dishonorable dismissal. The gentlemen appointed to fill these vacancies, Dr. A. W. Maclay, in New York, and Drs. S. J. Holley and Wm. H. Thayer, in Brooklyn, all of whom had served creditably in the summer of 1866, reported promptly for duty. In the death of Dr. Fowler Prentice, of Brooklyn, by pneumonia, on the 28th of January, 1867, the Board met with the loss of a most faithful, upright and competent officer. He was among the original appointees of the Board. From the day of his appointment to the time of his fatal illness, he devoted himself most conscientiously to his duty, and during the prevalence of cholera in 1866, distinguished himself by his entire self-sacrifice to the care of those attacked with the disease.

During the summer the following gentlemen have reported and performed duty as Assistant Sanitary Inspectors in their respective districts:

Dr. George Bayles, Greenburgh and Mount Pleasant, Westchester Co.

Dr. N. K. Freeman, West Farms and Morrisania, Westchester Co.

Dr. George F. Jackson, Fort Washington, N. Y.

Dr. J. J. Ketchum, Harlem, N. Y.

Dr. Wm. O'Meagher, Richmond Co., S. I.

Dr. J. H. Pooley, Yonkers, Westchester Co.

Dr. Philander Stewart, Cortlandt, Westchester Co.

Dr. George P. Wright, Newtown, L. I.

The Sanitary Inspectors have continued to perform their duties with fidelity to the Board, and, at the same time, with all deference to the rights of every citizen. Their visits are no longer looked upon with distrust and suspicion, as, in some cases, they were at first. As it has become evident that their investigations and reports are made with strict regard to private rights, and in a spirit of justice, with no partisan ends in view, or sympathy with any thing but the true merits of the case, the manner of their reception has gradually changed, and, as the ultimate results of their visits have appeared in the amelioration of distress, and the removal of sources of discomfort and disease, the change has been still more marked. While in the early days of their work information was given to these officers most grudgingly, and the materials for their reports obtained only after the most disagreeable and sometimes dangerous experiences, now they are welcomed, and treated with every respect and courtesy.

During the winter of 1866–67, a systematic and universal inspection of tenement houses was instituted, with a view, not only to their immediate condition as to cleanliness, as had necessarily been the case during the past epidemic, but to the permanent remedy of evils of construction and management.

It was found that in the city of New York alone there were eighteen thousand five hundred and eighty-two (18,582) of these houses.

The reports of the Inspectors upon them were duly laid before the Board, and I would respectfully refer to my own report to the Board on this subject, herewith transmitted.

I beg, also, to invite attention to a few extracts from recent reports by the Sanitary Inspectors, touching upon the different points in which improvements have taken place in tenement houses since the creation of the Board, and especially since the passage of the Tenement House Law.

Extract from Report of Sanitary Inspector A. W. Maclay, M. D., First District, bounded north, by Fourteenth street; south, East River and Battery; east, Catherine, Bowery and Third avenue; west, Broadway.

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"A great many of the owners of this kind of property were only acquainted with its condition through the representation of the agents employed by them. As a general rule, it may be said of them that, since the different acts of the Legislature for the promotion of the public health have become more generally known, they have evinced a very general disposition to maintain them, as promoting cleanliness, morality, and the general wefare. Not unfrequently, during sanitary inspections, the undersigned has had occasion to meet with very many property owners on the premises leased by their agents, and it is remarkable what a change has taken place in their views, indicated by the difference in the manner with which they greet an officer of the Board now and formerly. Heretofore such visits were regarded as an invasion of private rights, but latterly they are now rather considered as conducive to the reputation of their buildings and the health of the occupants.

"*Cellars.*—In Cherry street, and the streets in its vicinity running east and west, as well as in other parts of the First Sanitary District, some improvement has taken place in cellars occupied as dwellings. Attention has been given to their ventilation, limewashing, general cleanliness, and the removal of causes of disease. There appears, however, to be much reluctance, on the part of owners of the property, to comply with the Tenement House Act, in its application to cellars. The majority of these cellars continue as formerly, from the difficulty of making any alteration whatever, in respect to light and ventilation. Where the action of the Board has been invoked for the enforcement of the law, the owners have preferred to close their cellars altogether. This is but a repetition of what occurred in the cities of the Old World. The 'Towns Improvement Clause Act' of Dublin, declares that no cellars less than seven feet high, without a window, and of which more than two-thirds is below the level of the street, shall be inhabited. This law resulted in closing over three thousand cellars in a city far below our own in population." * * * * * * * * *

Extract from Report of Sanitary Inspector W. F. Deming, M. D., Second District, bounded north, by Canal street; south, by the Battery; east, by Broadway; west, by the North River.

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"In the district of which I have charge, but four or five tenement houses have been built since my appointment, and many have been demolished, and stores substituted. With but few exceptions, the tenement houses in this portion of the city are old and badly-constructed buildings, which are with difficulty so altered as to conform to the present law. So far as my experience goes, however, owners have promptly obeyed all orders or suggestions emanating from the Board of Health. The great difficulty in these old houses was deficient ventilation, and this has been obviated so far as possible." * * * * * *

Extract from Report of Sanitary Inspector Thos. H. White, M. D., Sections A and B, Third District, bounded north, by Fourteenth street; south, by South street; east, by the East River; west, by Avenue A, Norfolk, and Jefferson streets.

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"The Tenement House Law, though requiring all tenement premises to be put and kept in a proper sanitary condition, has been in force but a few months, and its provisions and requirements seem to be imperfectly comprehended by many owners and agents, who still appear to think that their attention must be especially called to the defective sanitary condition of their property, before it is necessary to remedy it. Where their attention is so called it is but just to many of them to state, that they are prompt in fulfilling the provisions of the law, while some of the more philanthropic are voluntarily complying with it.

"It is gratifying to note during our daily inspections that the occupants of tenement dwellings, especially of the lower class, are beginning to appreciate the measures employed for the amelioration of their condition.

"The presence of overflowing garbage-boxes still continues to be one of the principal causes of filthy sidewalks and street-gutters. The system of collecting and removing garbage and ashes has been greatly improved; and if the occupants of dwellings and tenement houses could be prevented from placing their garbage and ash receptacles upon the sidewalks, except at such times as the ashman is passing through the street, this source of filthiness would be entirely removed.

"In many portions of the district, the inhabitants are voluntarily adopting this plan, and the example is spreading. In conclusion, I may state that the signs of the beneficial working of the Tenement House Act are evinced in greater cleanliness, more frequent whitewashing of hall-ways and rooms, improved ventilation and more efficient drainage, and especially in a more careful oversight of tenement premises by owners and agents. Sufficient time has not elapsed to develop all of the sanitary provisions of the law, but enough has already been accomplished to enable us to indulge the hope that as the public and the owners, agents, and occupants of tenement dwellings shall become more familiar with its beneficent purposes, we may gradually attain to a perfect system in the construction and management of such dwellings." * * *

Extract from Report of Sanitary Inspector J. H. Emerson, M. D., Sections C and D, Third District, bounded north, by Fourteenth street; south, by South street; east, by Avenue A, Norfolk, and Jefferson streets; west, by the Bowery and Third avenue.

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"The Tenement House Law has now been in operation some five months; and, as Sanitary Inspector of a portion of New York where there are many of these houses of every description and class, I have certainly witnessed results traceable to it.

"As compared with their condition at the time when the Board of Health was organized, some twenty months ago, the tenement houses exhibit a very marked improvement in construction, in maintenance, and in cleanliness among their occupants. In addition to the frequent visits of Inspectors and the consequently increased vigilance of agents and landlords, I cannot but attribute a considerable share in this improvement to the better administration of the street-cleaning department, more especially that branch of it which attends to the removal of ashes and garbage. During the past year, and particularly since the opening of last spring, the execution of this has been with a regularity hitherto unknown in New York. Nowhere is this more evident than in the most thickly-settled tenement neighborhoods. Since the well-timed destruction in August, 1866, under the orders of the Board of Health, of the foul garbage boxes which so generally encumbered the sidewalks, the responsibility for the disposal of the refuse of their housekeeping is brought directly to the individual tenants. They are prompt to bring it out, each in some sufficient receptacle, so soon as the bell is rung through the streets, and are equally eager to secure the receptacle, by removing it, as soon as emptied, to their own apartment. So long, then, as the ashman makes his rounds with regularity, there will be comparatively little of such refuse thrown into the street.

"In many of the better class, and in the smaller tenement houses, landlords have not infrequently introduced regular water-closets (generally arranged with a spring seat), in lieu of the old-fashioned privy, when required to make a sewer connection. This is manifestly a gain, and it also shows that the landlords have increased confidence in their tenants, when they are willing to trust them with such an apparatus.

"Some years ago, a gentleman of my acquaintance, owner of a number of tenement houses, furnished some with stationary wash-tubs, with neat wood-closets, and other conveniences, such as we find in many tenement houses to-day. After a few months he found it necessary to remove all such conveniences, or what was left of them; for pipes had been cut and carried away; water had been allowed to flood the house; tubs and doors had been chopped up for kindling wood. To-day it is the rare exception for us to witness wanton destruction of property by tenants. They have been, and are being, educated to better behaviour, and to use what is furnished them, as not abusing it.

"A person who has once complied with the law himself, whether voluntarily or on compulsion, is naturally jealous of any infringments of it on the part of his neighbors, particularly when such infringements involve him in a loss or injury,—and such persons not unfrequently become useful aids to the Sanitary Inspector. Tenants often express gratitude to the Inspector for looking after their health and comfort—nor has it been my experience that landlords have made the expenses they have been put to under the orders of the Board a pretext for raising the rent of rooms; on the contrary, they are quite as apt to raise it without making improvements. The tenement houses now building are generally provided with sufficient ventilating windows in the bedrooms. This requirement of the law is one which landlords have not been very ready to comply with. I cannot recall a single instance where ventilating windows were *voluntarily* introduced into a tenement house, but there are many where this has been done on a simple notice, without an order of the Board issuing.

"I always regard it as favorable to the cause of health and cleanliness, when I find a tenement-house has passed into the hands of an owner who will live in it. It is also my experience that Germans, as owners, take unusual pride in their houses, and great pains in keeping them clean, and complying with the law and the orders of the Board. Of those owners of tenement houses who live in them, in the part of New York with which I am most familiar as Inspector, by far the greater number are Germans.

"One requirement of the Law—that calling for semi-annual whitewashing of the walls and ceilings—though apparently a minor matter—has an importance not easily over-estimated. It was the rule in the best houses, and with the more careful landlords and agents, before the passage of the Law. The effect of white, fresh walls and ceilings in the public parts of the house is to rouse a spirit of emulation in the tenants to have their own apartments equally presentable.

"Agents, not less than many owners, have been reluctant to post up their names and addresses in their tenement houses, and yet this has been done in many instances; and upon the walls of many a tenement-house may now be seen the names of some of the largest real estate owners in the city, and it will probably be found that, on such property, expense has been incurred for repairs, under the stimulus of orders from the Board.

"In regard to some of the improvements wrought in tenement property, it is difficult to separate the efforts of the Board of

Health, in pursuing its own general plans of sanitary reform, from those directly referable to the new Tenement House Law. Thus, the Board has obtained, through the Croton Aqueduct Department, the construction of sewers in many streets where they were much needed. This enables the requirements of the Law to be carried out—and so between the two, the air is saved from fertile sources of contamination, in-doors and out of doors, from reeking privy-vaults, and street-gutters and alleys flooded with filthy water in summer and ice in winter.

"Rowdies and idlers who infest the streets at night, in the neighborhood, more particularly, of liquor shops, very often break into the yards and halls and alleys of tenement houses in search of a privy—and I have seen a number of such houses where it was almost impossible to keep locks on the doors of house or privy, or to preserve the alleys and yards in a condition of decent cleanliness. Here we have an additional argument for the establishment of public urinals.

"The above are the principal matters in which the working of the Board of Health and of the new Law can be traced in their effects upon tenement houses. As Sanitary Inspector, my attention has been mainly directed to those infringements of the Tenement House Law which were, at the same time, more or less flagrant violations of well-recognized laws of health. We have yet to see the effects of many other provisions of the Act. I have no doubt that they will prove equally gratifying with those already tested, and that, when enforced, they will be the more readily acquiesced in from the manifest utility and practical value of the former. The untested parts are mostly those involving construction, and, of course, require a larger experience to prove them."

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Extract from Report of Sanitary Inspector James L. Brown, M. D., Fourth District; north, by Fourteenth street; south, by Canal; east, by Broadway; west, by the North River.

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"The public halls and stairways, with their floors, ceilings and sidewalks, together with yards, privies and cellars, form a very considerable part of every tenement house, and constitute that portion in which filth most abounds, because they are used in common by all, and cared for particularly by none. By holding the landlord responsible for the condition of these parts of the house, and by bringing home to him a sense of this responsibility, the Board of Health have succeeded in demonstrating that a very considerable part of the filth, of even the worst class of tenement houses, is *not* inevitable. The cleaning, whitewashing and scrubbing that have followed in the wake of the Inspectors, have been so many lessons in practical hygiene to the occupants of these houses, and, although filth still flourishes in a large majority of our low tenements, enough has been effected to prove that it is not a necessary evil. The employment, in every large tenement house, of a vigilant housekeeper, armed with a few simple sanitary regulations, would soon reduce to a minimum the labors of sanitary inspectors in this department of their work, and abolish the greatest sanitary evil in our midst."

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Extract from Report of Sanitary Inspector Ed. H. Janes, M. D., Sections A and B, Fifth District, bounded, north, by Forty-second street; south, by Fourteenth street; east, by Sixth avenue; west, by North River.

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"The overcrowding of tenement houses has ever been, in my opinion, the most serious evil of the tenement house system, greatly enhancing the evils resulting from a deficiency in light, ventilation and proper drainage, and telling fearfully upon the infant mortality of our city, and impairing the morals of this portion of our population.

"Early in the spring of 1866, efforts were made to abate, in some degree, this evil, and many of the owners of tenement house property consented to so change the interior structure of their buildings as to accommodate but one family on a floor, hitherto occupied by two. In many instances these alterations were made, but the continued high prices of provisions, and, in fact, all the necessaries of life, the scarcity of houses in proportion to the increased population, with the consequent rise in rents, combined to render it impossible for the poorer portion of the laboring classes to avail themselves of the benefits resulting from such improvements, and the evils of overcrowding still exist to a considerable extent, and will continue to exist until there is a reduction in rents and the prices of the other necessaries of life.

"So far from being odious, I think the Metropolitan Health Law is generally regarded with satisfaction, not only by the poorer classes, but by the owners of property, not excepting the owners of tenement houses, who, perhaps, are oftener called upon to feel its authority than any other class of men. It is true that many protest against complying with many of its requisitions, yet, when required improvements are once well made, it is generally satisfactory to all parties concerned."

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Extract from Report of Sanitary Inspector James W. McLane, M. D., Sections C and D, Fifth District; bounded, north, by Forty-second street; south, by Fourteenth street; east, by East River; west, by Sixth avenue.

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"In many instances the owner now employs, as agent, some one of the tenants (deducting a small amount from the rent paid by said tenant as pay for his services). This tenant, in some cases, collects the rent, but exercises a constant supervision over the condition of the house. I have generally found that when an agent resides on the premises, the house is kept in good order, and the owners of tenement houses have also discovered this, and some employ a tenant as an agent, finding that they thus avoid numerous small expenses, and are free from notices and orders from the Board of Health.

"I know of very few houses in my district, which are not, at present, kept in a more uniformly cleanly and orderly condition than they were two years ago.

"In the district in which I have charge, many tenement houses, which, two years since, were in a dilapidated and filthy condition, have been bought by enterprising and thrifty Germans, who have put them in order, and moved into them themselves, letting out portions of them, but occupying a portion themselves, and acting as their own agents.

"No tenement houses are so well kept as those in which the owner is also an occupant, and this change of property from one man to several, I regard as one of the best results which the Board of Health has been indirectly instrumental in bringing about.

"Again, gentlemen who own a large number of tenement houses have, in several instances, adopted what proves to be a very sure way of keeping their houses in repair, namely, employing a carpenter and a mason, and other workmen, who devote their whole time to inspecting these houses, and making any repairs they find to be necessary.

"So far as I have been able to ascertain, from conversation with owners and agents, the provisions of the Tenement House Law are not considered onerous, while the manner in which it is being carried out by the Board of Health is highly praised. I think, however, that one reason why it has not more generally been complied with is, that owners are not properly informed as to its provisions." * * * * * * * * *

Extract from Report of Sanitary Inspector Moreau Morris, M. D., Sixth District, bounded, north, by One Hundred and Tenth street; south, by Forty-second street; east, by the East River; west, by Sixth avenue.

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"I cannot forbear quoting the remark, frequently heard from tenants, that if the landlord or agents would keep the public portions of the house in good order, well whitewashed and frequently cleaned, they (the tenants) would be far more encouraged to keep their apartments in like condition, and actual experience, during inspections, proves this fact as the rule; for, where the landlord or agent is careful to keep the premises clean and in good repair, the tenants evince the same watchfulness; while, on the other hand, where the former apparently takes no interest, except to secure the rents, is found the worst class, both of tenants and houses.

"Under an impression that the ordinances of the Board of Health, and the new Tenement House Act forbid it, the use of basements or under-ground rooms as dwellings has been almost entirely abandoned. Only people of the most indigent class, whose means do not admit of a better habitation, are found in them. In several instances, where these basements have been found damp, or so dark and badly ventilated as to be detrimental to health, the owners have been notified to have them vacated as dwellings, which has been done. The effect of a few instances of prompt measures in securing obedience to orders on the part of the Board, has induced others to do likewise, without orders.

"The ventilation of a room should be the basis of a true estimate of its healthy condition. The highest English authorities (Drs. Arnott and Reid), consider that from ten to twenty cubic feet of ventilation per minute for each person is the smallest amount allowable. 'Murchison on Fevers,' says: 'If the air in a room contain more than one per cent. of carbonic acid, or be in the slightest degree fusty, it must be held that the ventilation is defective, or that the number of inmates is too great. Although our present ignorance obliges us to take the amount of carbonic acid as the safest index of all the injurious substances which render ventilation necessary, this is not the only substance contained in air contaminated by overcrowding. Pure carbonic acid has no unpleasant taste or smell, whereas the disagreeable fusty odor, produced by overcrowding, with bad ventilation; is familiar to all. Investigation has proved that five hundred cubic feet of air-space, with two cubic feet of ventilation per minute, constitute the smallest amount that can be safely allotted to each person.

"'The means of ventilation are either constant or occasional. The constant (the chimney or other unclosed) openings, are more important than the occasional (doors and windows), and should always be proportioned to the number of inmates.'

"As a general rule, where advice has been given, or suggestions made, to owners of tenement-property, with regard to ventilation, they have cheerfully acquiesced, and made the desired alterations. In particular instances the pressure of the law has compelled these improvements. In such cases the wisdom and benefit of this law is abundantly vindicated.

"A very decided change has taken place in the sentiments of both property-owners and tenants, with regard to the operations of the Board of Health. Finding that equal justice is intended, in their endeavors to improve the sanitary condition of tenement houses, they (owners and tenants) are rapidly becoming more willing and prompt to comply with suggestions from its officers."

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Extract from Report of Sanitary Inspector Chas. W. Packard, M. D., Seventh District, bounded north, by One Hundred and Tenth street; south, by Forty-second street; east, by Central Park and Sixth avenue; west, by North River.

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"The great bulk of the tenement-house population is made up of foreigners, whose sanitary needs demand not only an abundant supply of light and pure air in their dwellings, but also an education in the first principles of the laws of health. For generations they have been content with living in almost brutish disregard of hygienic laws, and an attempt to improve their condition has not only involved an effort to provide them with suitable dwellings, but also their instruction in the commonest laws of health. In this connection it is interesting to notice a steady and even remarkable growth in knowledge of what pertains to their physical well-being, and to observe how cordially they have learned to sustain the enforcement of sanitary measures, even though they may involve temporary inconvenience to themselves. The frequent visits and questionings of sanitary officers have helped to educate them to a more or less intelligent understanding of the necessity for the frequent cleaning and whitewashing of their rooms, and for an abundant supply of air and light.

"Improvements in tenement houses have been more noticeable since the passage of an 'Act for the Regulation of Tenement Houses.' At a recent inspection of such houses in the Seventh District, it was found that nearly all were supplied with ventilating windows for the hall bed-rooms, many of which bore evidence of having been recently introduced, the owners never having received any direct orders from the Board of Health. This act has also had a great effect in modifying and improving the old plan of building tenement houses. It has been found to be much cheaper to build these houses so that they will answer the requirements of the Tenement House Law, than to remodel them after they have been built, and so the upper wards are being built up with model tenement houses, which are advertised as 'having all the modern improvements.'"

The inspection of slaughter-houses was also repeated with a view to renewed effort for their expulsion from the city. It was found that there were still one hundred and forty (140) in operation in the built-up portions of the city. Reports upon these were duly forwarded, and I would also refer here to my report upon this subject, herewith transmitted.

In several crowded institutions in the city there were, during the winter, outbreaks of typhus and typhoid fever, but they, in each instance, were quickly checked by the evacuation of the buildings, and subsequent disinfection, whitewashing, etc. In the most conspicuous case, the details of which were duly brought to the attention of the Board, improved ventilation and the introduction of Croton water has rendered entirely healthy a large educational institution, which, for years, had been subject to annual epidemics of typhoid fever.

Several special subjects, also, have been investigated by order of the Board—*e. g.*, the management of the ferries, especially as exemplified in the burning of the "Idaho," on the 26th November, 1866.

Also the investigation into alleged informalities in the Coroner's office.

As full reports of these investigations were transmitted immediately upon their completion, further mention of them, at this time, seems unnecessary.

The resolution of the Board, regarding the protection of the city from yellow fever during the past summer, and the preparation and furnishing of permits at this office, has been carried out, and has always received the cordial co-operation of the officers of Quarantine. The fidelity and promptness with which the arrival of vessels from infected ports has been reported, and full details of their condition given, has enabled the Superintendent to be constantly aware of the impending danger and prepared to take any measures that might become necessary. In the few isolated cases which have occurred, fumigation, and the other customary means of disinfection, have been applied. With these few exceptions, however, there has been no necessity for further action than to co-operate with the Quarantine officers in enforcing such regulations as their limited facilities enabled them to establish.

Special complaints from citizens are, as heretofore, referred, at once, to the Inspectors, and receive their prompt attention.

Since the last annual report, November 1st, 1866, beside the general supervision of the District, the following inspections have been made in the city of New York and Brooklyn, and have been the basis of reports:

Total of inspections made	35,045
Total of inspections made per month	2,920.4
Total of inspections made per week	673.9
Average number made by each inspector per year	2,333.3
Average number made by each inspector per month	194.6
Average number made by each inspector per week	44.8

The following has been the subjects of this above inspections:

Tenement Houses	11,414
Private Dwellings	5,009
Slaughter-houses, establishments for fat melting and bone boiling, etc., manufactories, and other places of business	2,234
Horse and cow stables and piggeries	1,919

Streets, piers, sidewalks and gutters	1,689
Sunken and vacant lots, manure heaps and dumping grounds	1,187
Public buildings	98
Shipping	22
Yards, cellars, waste-pipes, privies, etc.	11,473
Total	35,405

For the details of work done in Brooklyn I respectfully refer to the annexed report of Dr. J. T. Conkling, Assistant Sanitary Superintendent.

In the country towns the officers have generally been successful in causing the abatement of nuisances, by personal appeal to the parties responsible, without invoking the authority of the Board.

It was ascertained in July last that the village of Portchester, town of Rye, Westchester County, was in a most filthy and insalubrious condition. An Inspector was sent from this city to investigate the causes of this, and it was found that the most gross neglect prevailed there. The village was afflicted with the presence of a large number of filthy pig-pens, tenement-houses, stagnant pools of defiled water, overflowing privies, etc.—a similar condition to that which last year called for peremptory action on the part of the Board, for the suppression of cholera. All the orders of the Board, based on the reports of Inspector White, have been promptly complied with, and a radical improvement in the condition of the village has been the result.

The nucleus of the Disinfectant Corps was, as sanctioned by the Board, retained through the winter of 1866–67, and was employed in disinfecting houses where the existence of fevers of a contagious character was discovered.

In February last the Fire Department was applied to for the use of one of their unoccupied engine-houses by this department. They assented, and the building, No. 128 Worth street, was turned over to the Sanitary Superintendent. The basement was at once fitted for stable purposes, the first story for storing wagons, the second for office and quarters for the men, and the third as a laboratory and store.

On the 10th of May, in accordance with instructions of the Board, the Sanitary Superintendent commenced the execution, by men under his own control, of such orders of the Board as were not complied with by the parties on whom they were served.

This "department of labor" was subdivided—one subdivision to included the execution of all orders requiring the employment of skilled labor, and the other all orders requiring ordinary labor, such as cleansing, whitewashing, the removal of rubbish, disinfecting, etc. The former subdivision was placed under the immediate charge of the Engineer of the Board, to whose report I respectfully refer for the details of work done under his supervision. The latter was placed under the charge of Mr. James A. Christie, who had already charge of the Disinfectant Department, with which the skilled labor was now incorporated.

A large number of day laborers were employed, and a few by the month, the latter to act as foremen. Some additional horses and wagons were purchased, as well as the requisite tools and materials.

Of the whole number of orders issued by the Board since said date (May 10), viz : eight thousand seven hundred and sixty-nine (8,769), exclusive of five hundred and sixty (560) final orders (which are but repetitions of original ones), the Sanitary Superintendent has been obliged to execute but seven hundred and ninety-one (791), the remainder having been complied with by the property owners or other responsible parties upon whom they were served.

In the subdivision of skilled labor there have been executed two hundred and four (204) orders, as follows:

No. of order.	Date of execution.	Premises.	Nature of work.	Expenses.
1	August, 1867	25 1st avenue	Constructing manure vault and valley drain	$114 20
3	Sept., 1867	409 West 24th street	Grading yard	8 00
4	do	190 8th avenue	Constructing new sewer connected with privy (iron pipe)	328 81
17	do	315 Delancy street	Constructing new sewer—connected privy	283 28
25	do	438 West 19th street	Constructing new sewer—connected privy	267 15
38	do	426 East 17th street	Constructing manure vault	63 63
40	do	258 East Houston street	Grading yard	10 12
46	do	55 Allen street	Constructing new sewer—connected privy (iron pipe)	425 84
49	do	96 10th avenue	Constructing hydrant drain to connect with sewer	45 32
55	October, 1867	52 to 68 1st street	Constructing manure vault (128 cubic feet)	101 62
65	do	132 Elizabeth street	Constructing new sewer—connected privy	162 75
122	July, 1867	68 Crosby street	Repairing and lining privy vault	63 13
124	do	313 East 53d street	Filling privy—constructing water-closet	102 54
126	August, 1867	Melrose	Filling sunken lot	275 02
127	do	Melrose	Filling sunken lot	217 20
129	do	S. W. cor. 48th st. & 3d ave.	Filling and grading cellar	67 40
131	Sept., 1867	308 West 21st street	Repairing and extending leader	40 10
133	do	244 2d street	Lining manure vault and grading yard	38 25
137 142	August, 1867	93 and 93½ 7th avenue	Constructing new sewer—connected privy	211 49

No. of order.	Date of execution.	Premises.	Nature of work.	Expenses.
138 139	August, 1867	124 W. 17th st. & 95 7th ave.	Constructing new sewer—connected privy	$354 93
140	do	327 West 37th street	Connecting premises with street sewer	126 75
141	do	102 7th avenue	Repairing manure vault	6 00
143	do	1390 Broadway	Repairing yard and drain	33 26
145	Sept., 1867	9 Spring street	Constructing new sewer—connected privy	179 50
151	do	472 6th avenue	Constructing new sewer—connected privy	188 56
153	August, 1867	205 West 20th street	Constructing new sewer—connected privy	244 04
155	do	325 East 62d street	Draining cellar and connecting it with street sewer	109 25
159	Sept., 1867	24 Oak street	Constructing new sewer—connected privy	297 06
162	do	236 East 24th street	Constructing manure vault and valley drain	93 60
163	do	419 East 16th street	Constructing new sewer—connected privy	162 67
167	do	684 Water street	Constructing new sewer—connected privy	232 67
179	do	Morrisania	Filling sunken lot	25 08
182	August, 1867	Mott Haven	Filling sunken lot	49 92
183	do	Mott Haven	Filling cellar	8 95
185	do	Morrisania	Filling sunken lot	116 01
189	do	225 West 27th street	Repairing roof and grading alley	78 59
191	do	197 West 17th street	Constructing manure vault	62 35
192	do	342 West 16th street	Constructing sewer—connected privy	109 85
201	Sept., 1867	765 2d avenue	Grading yard	19 40

203	August, 1867	Mott Haven	Filling sunken lot	247 99
205	Sept., 1867	251 Stanton street	Constructing new sewer—connected privy; repairing roof and leader	220 77
206	do	859 Broadway	Filling privy vault	28 00
214	do	306 East 56th street	Constructing new sewer—connected water-closet	121 57
217	do	E. side 3d av. bet. 77th & 78th	Constructing new sewer—connected privy	300 93
219	do	64 Bleecker street	Tapping sewer pipe	26 21
220	do	317 East 26th street	Constructing new sewer—connected privy	125 00
225	do	285 East 55th street	Constructing water-closet	60 15
226	do	348 East 21st street	Constructing sewer—connected privy	139 67
228	do	155 Delancey street	Constructing new sewer—connected privy	229 59
230	do	109 Charlton street	Repairing roof and grading yard	182 79
236	do	789 2d avenue	Repairing roof	18 86
241	do	1110 2d avenue	Constructing new sewer—connected privy	227 50
244	do	138 East 18th street	Constructing manure vault	61 65
256	do	207 East 21st street	Repairing leader	2 25
258	do	S. E. cor. 123d st. and 3d ave.	Constructing sewer—connected privy	89 25
259	do	275 West 18th street	Grading yard, extending leader, and trapping sewer pipe	60 55
264	do	498 Greenwich street	Constructing new sewer—connected privy	263 22
268	do	218 Hudson street	Connecting premises with street sewer	255 99
278	do	N. E. cor. 76th st. and Ave. A	Filling cellar	42 00
283	do	618 8th avenue	Repairing leader	7 00
286	do	372 Canal street	Repairing privy vault	32 64
298	do	761 2d avenue	Grading yard	11 50
299	do	763 2d avenue	Grading yard	10 90

No. of order.	Date of execution.	Premises.	Nature of work.	Expenses.
301	Sept., 1867	27 Hubert street	Repairing and lining privy vault	$67 14
302	do	60 and 62 Baxter street	Grading yard and repairing and extending leader	107 02
305	do	89 Morton street	Constructing new sewer—connected privy	118 90
306	do	S. W. cor. 48th st. & 9th ave.	Connecting premises with street sewer (rock)	411 77
307	do	122 West 20th street	Grading yard	14 37
318	do	315 East 32d street	Constructing new sewer—connected privy	254 00
319	do	313 East 32d street	Constructing new sewer—connected privy	277 00
326	Octob'r, 1867	179 Duane street	Constructing new sewer—connected privy	110 00
331	do	150 Sheriff street	Constructing manure vault	68 93
334	Sept., 1867	61 Mulberry street	Constructing hydrant drain and extending leaders	91 57
335	Octob'r, 1867	678 2d avenue	Constructing hydrant, cesspool and drain	18 75
339	do	64 James street	Constructing new sewer—connected privy	237 95
343	do	58 Centre street	Connecting premises with street sewer by a new drain and repairing and extending leader	186 59
344	do	250 West 18th street	Filling old privy sink and constructing sewer—connected water closet	147 49
351	do	68, 70, 72 Wooster street	Constructing manure vault	74 45
352	do	321 East 31st street	Relaying basement floor	20 57
353	do	323 East 31st street	Relaying basement floor	20 57

356	do	430 West 37th street	Constructing new sewer (connected privy) and grading yard	260 30
357	do	W. side 3d av., b. 119th and 120th streets	Trapping waste pipes	16 63
360	do	323 Rivington street	Connecting premises with street sewer	258 15
362	do	62 Macdougal street	Filling privy sink and constructing sewer—connected water-closet	175 68
364	do	987 and 989 3d avenue	Connecting premises with street sewer	175 00
365	do	309 and 311 Broome street	Repairing and lining privy vault	73 93
369	do	229 1st avenue	Constructing sewer—connected privy	114 55
380	do	30 Madison street	Constructing new sewer—connected privy	256 68
391	do	584 Broadway	Grading alley	19 00
395	do	347 East 4th street	Constructing manure vault	61 12
402	do	166 2d street	Grading yard	98 85
409	do	279 and 281 Mott street	Constructing hydrant drain	28 00
422	do	28 Stanton street	Constructing new sewer—connected privy	233 32
432	do	548 East 13th street	Constructing new sewer—connected privy	254 27
433	do	15 Harrison street	Repairing roof and filling cistern	78 72
444	do	254 West 40th street	Constructing new sewer—connected privy (two days' labor)	12 48
459	do	25 Suffolk street	Filling and cleaning cistern	53 30
5980	August, 1867	228 West 20th street	Repairing privy vault	38 67
6236	do	84 Avenue C	Repairing privy vault	21 25
6456	do	182 3d avenue	Repairing waste pipes	34 62
6460	do	82 Franklin street	Resetting gutter stones	14 57
6464	do	124 Henry street	Repairing privy vault and removing obstructions from drain	43 37

No. of order.	Date of execution.	Premises.	Nature of work.	Expenses.
6493	August, 1867	444 Grand street	Repairing hydrant drain	$4 37
6514	do	508 Greenwich street	Resetting gutter stones	9 37
6515	do	506 Greenwich street	Resetting gutter stones	9 37
6601	do	30 New Bowery	Repairing drain pipe	46 25
6705	do	336 East 23d street	Repairing sewer pipe	9 53
6770	do	181 East 11th street	Resetting gutter stones	9 50
6797	do	28 Pell street	Repairing privy vault	26 58
6835	do	241 West 26th street	Repairing sewer pipe	18 75
6854	do	539 and 541 6th avenue	Repairing and lining privy vault	64 63
6864	do	26 Vandewater street	Reflagging and grading sidewalk	25 00
6865	do	30 Madison street	Repairing roof	10 55
6917	do	322 West 42d street	Repairing house drain	14 75
6978	do	48 Ridge street	Repairing roof	42 30
6979	do	52 Ridge street	Repairing roof and sewer pipe	87 70
6997	do	83 West Houston street	Resetting gutter stones	10 50
7010	do	177 Elizabeth street	Repairing privy vault	28 13
7051	do	177 Wooster street	Repairing sewer pipe	18 85
7064	do	105 Hester street	Repairing roof	81 10
7111	do	179 Elizabeth street	Repairing and lining privy vault	76 25
7155	do	115 Delancey street	Repairing roof and sewer pipe	142 93
7166	do	19 Mulberry street	Repairing and lining privy vault	55 27
7167	do	33 Cherry street	Repairing and lining privy vault	117 88
7174	do	6 Catharine Slip	Repairing water-closet	23 54

7185	do	226 East Broadway	Repairing roof	48 70
7203	Sept., 1867	395 3d avenue	Reflagging and grading sidewalk	25 50
7247	August, 1867	304 West 25th street	Repairing privy vault	32 65
7385 7386	Sept., 1867	101 and 103 East 25th st	Repairing sewer pipe	27 05
7391	do	S. E. cor. Broome and Sullivan streets	Repairing and lining privy vault	60 11
7403	August, 1867	403 7th avenue	Repairing privy vault	24 75
7438	do	67 James street	Repairing and lining privy vault	78 50
7442	Sept., 1867	73 Washington street	Repairing slate roof, skylights, and walls and ceilings of house	171 68
7446	August, 1867	172 Division street	Repairing roof	22 98
7470	do	82 Charlton street	Repairing and grading yard	16 00
7476	do	64½ Sullivan street	Resetting gutter stones	10 50
7516	do	N. W. corner Varick and Dominick streets	Repairing sewer pipe	2 75
7549	do	27 and 29 Hudson street	Resetting gutter stones	35 00
7554	Sept., 1867	N. W. cor. 27th street and 9th avenue	Reflagging and grading sidewalk	27 60
7588	do	67 and 69 West Broadway.	Resetting gutter stones	28 00
7596	do	600 6th avenue	Reflagging and grading sidewalk	35 51
7640	August, 1867	68 Spring street	Repairing leaders	19 45
7643	do	7 Centre Market Place	Repairing leaders	20 75
7765	Sept., 1867	334 Hudson street	Repairing and lining privy vault	70 25
7777	do	99 King street	Repairing leaders and gutters of house	84 93
7788	do	57 Cannon street	Repairing drain	10 70
7790	do	131 Suffolk street	Repairing and lining privy vault	54 00

No. of order.	Date of execution.	Premises.	Nature of work.	Expenses.
7810	Sept., 1867	307 9th avenue	Repairing privy vault	$9 50
7829	do	219 East 38th street	Repairing and lining privy vault	70 00
7849	do	259 West 30th street	Resetting gutter stones	11 75
7850	do	257 West 30th street	Resetting gutter stones	11 75
7937	do	214 Mulberry street	Repairing roof	203 99
7945	do	670 11th avenue	Repairing drain	32 64
7947	do	215 East 38th street	Repairing roof, privy vault and manure vault	48 17
7952	do	54 Baxter street	Repairing sewer pipe	27 18
7966	October, 1867	561 Grand street	Repairing roof	174 50
7970	Sept., 1867	238 Division street	Repairing privy vault and leaders	55 35
8007	do	185 Cherry street	Repairing privy vault	58 51
8048	do	10 Rose street	Repairing drain	50 00
8093	do	425 and 427 4th avenue	Repairing privy vault	16 06
8142	do	29 3d avenue	Repairing and lining privy vault	76 17
8159	October, 1867	12½ Vandewater street	Repairing leaders and eave-gutters	316 50
8165 8585	Sept. 1867	201 Elm st. & 20 Marion st.	Repairing privy vault and sewer pipe	45 63
8171	do	5 Hall Place	Repairing and lining privy vault	51 10
8172	do	31 3d avenue	Repairing and lining privy vault	62 57
8184	do	176 Avenue A	Repairing and lining privy vault	74 00
8194	do	128 West 30th street	Repairing roof and house drain	84 36
8255	do	229 Hudson street	Repairing sewer pipe	37 50

8290	do	657 2d avenue	Repairing roof	33	42
8320	do	540 West 27th street	Repairing sewer pipe	41	50
8348	do	138 West 30th street	Repairing water-closet and sewer pipe	87	57
8440	do	550 8th avenue	Repairing sewer pipe	13	50
8444	do	21 Hudson street	Repairing and lining privy vault	46	61
8497	do	517 9th avenue	Repairing sewer pipe	9	25
8517	October, 1867	42 Franklin street	Repairing roof gutter	26	80
8609	do	210 West 20th street	Repairing hydrant drain	22	80
8613	Sept., 1867	413 West 28th street	Repairing sewer pipe	7	70
8614	do	434 West 28th street	Repairing sewer pipe	28	12
8631	do	175 Chrystie street	Repairing and lining privy vault	56	05
8642	October, 1867	52 Oliver street	Repairing leaders	52	30
9078 9979 9080	do	599, 601, 603 11th avenue	Repairing sewer pipe	58	97
9147	do	227 William street	Repairing and lining privy vault	76	01
9149	do	258 10th avenue	Repairing hydrant drain	14	25
9161	do	243 West 4th street	Repairing and lining privy vault	53	86
9228	do	89 10th avenue	Resetting gutter stones	13	00
9253	do	621 5th street	Resetting gutter stones	9	00
9254	do	619 5th street	Repairing privy vault	9	00
9258	do	664 Water street	Repairing and lining privy vault	45	74
9280	do	91 10th avenue	Resetting gutter stones	13	00
9399	do	103 Cherry street	Repairing and lining privy vault	37	21
9414	do	256 West 30th street	Resetting gutter stones	10	50
9415	do	258 West 30th street	Resetting gutter stones	10	50
9424	do	159 Grand street	Repairing and lining privy vault	51	18

No. of order.	Date of execution.	Premises.	Nature of work.	Expenses.
9466	October, 1867	216 East 22d street	Repairing sewer pipe	$6 00
9616	do	85½ to 89 West 18th street.	Resetting gutter stones	39 25
9620	do	91 to 97 West 18th street.	Resetting gutter stones	63 00
9672	do	657 2d avenue	Repairing privy vault	24 78
9708	do	161 East 39th street	Repairing sewer pipe	14 50
	Total			$16,972 86

In the subdivision of unskilled labor, besides the scavenging, which has been under the supervision of the Captain of the Sanitary Company of Police, there have been executed one hundred and fifty-seven (157) orders, as follows:

No. of order.	Date of execution.	Premises.	Nature of work.	Expenses.
197	Sept. 3, 4, 1867	97 and 99 King street	Cleaning cellars	$7 25
3373	June 13, 1867	79 East 11th street	Cleaning vacant lot	18 50
3392	do	369½ Pearl street	Cleaning cellar	7 63
3427	do	225 West 27th street	Whitewashing halls	10 91
3543	do	410 and 412 East 19th st.	Cleaning yard	6 50
3589	June 6, 11, 1867	569 1st avenue	Cleaning cellar	64 25

3602	May 31, 1867	402 East 16th street	Cleaning cellar	8	50
3608	June 6, 1867	341 3d avenue	Cleaning cellar	8	00
3626	June 1, 1867	201 East 37th street	Cleaning and whitewashing walls of house	42	19
3628	May 31, June 1	214 East 38th street	Whitewashing walls of front and halls of rear house	15	49
3630	June 24, 1867	(old) 195 East 31st street	Repairing roof	5	50
3637	May 31, 1867	567 1st avenue	Whitewashing halls	9	91
3645	do	1 Bridge street	Whitewashing halls, &c	8	62
3651	do	76 Cortland street	Whitewashing halls	3	00
3660	June 6, 1867	340 Canal street	Cleaning yard	2	25
3705	June 8, 1867	52 Scammel street	Cleaning cellar	4	61
3706	do	54 Scammel street	Cleaning cellar	1	14
3725	do	90 Monroe street	Cleaning yard	5	75
3737	June 10, 1867	22 Broome street	Cleaning cellar	6	65
3745	June 7, 8, 1867	28 and 30 Division street	Whitewashing halls and cleaning cellars	72	27
3771	June 19, 1867	121 1st avenue	Repairing roof	18	00
3779	June 7, 1867	18 Hamilton street	Cleaning yard	5	75
3783	June 11, 1867	201 Elm street	Removing garbage, &c		75
3807	June 1, 1867	8 Gansevoort street	Cleaning cellar	1	80
3819	June 6, 1867	304 Greenwich street	Cleaning yard	4	25
3828	June 6, 1867	206 West 16th street	Cleaning cellar	13	25
3832	June 6, 12, 1867	276 West 39th street	Cleaning yard	116	49
3836	June 11, 1867	359 West 29th street	Cleaning cellar	6	15
3840	June 13, 1867	516 West 38th street	Whitewashing hall	7	42
3845	June 1, 1867	225 West 17th street	Cleaning yard	4	50
3854	June 5, 6 & 7, 1867	637 West 42d street	Whitewashing halls	21	36

No. of order.	Date of execution.	Premises.	Nature of work.	Expenses.
3861	June 4 and 5, 1867	639 West 42d street	Whitewashing halls	$12 60
3862	June 1, 3, 4, 1867	633 West 47th street	Whitewashing halls and cleaning cellar and yard	34 18
3863	do	631 West 42d street	Whitewashing halls and cleaning cellar and yard	25 33
3864	do	627 West 42d street	Whitewashing halls and cleaning cellar and yard	50 53
3865	June 4, 1867	635 West 42d street	Whitewashing halls and cleaning cellar and yard	28 24
3866	June 4 and 5, 1867	641 West 42d street	Cleaning cellar and yard, whitewashing halls	40 10
3867	June 5, 1867	643 West 42d street	Whitewashing halls and cleaning cellar	35 54
3868	June 1, 3, 4, 1867	629 West 42d street	Whitewashing halls and cleaning cellar and yard	24 08
3869	June 1, 1867	27 9th avenue	Whitewashing, &c	3 60
4377	June 10, 11, 1867	24 Watt street	Cleaning and whitewashing cellar	30 26
4379	July 1, 1867	38 Trinity Place	Whitewashing halls	11 93
4385	June 7, 1867	105 East Broadway	Cleaning cellar	5 75
4398	June 25, 1867	461 West 32d street	Cleaning and whitewashing cellar	6 61
4425	June 7 and 8, 1867	423 East 12th street	Whitewashing halls	18 60
4455	June 15, 1867	261 2d street	Putting up new leader	6 31
4456	June 13, 1867	15 Little West 12th street	Whitewashing halls	6 09

4457	June 14, 1867	310 East 38th street	Whitewashing halls	6 13
4509	June 10, 11, 1867	482 Broadway	Cleaning yard	22 40
4518	June 11, 1867	509 West 44th street	Cleaning cellar	4 45
4519	July 1, 2, 3, 1867	225 West 17th street	Whitewashing walls of rear house	19 48
4528	June 14, 15, 17,'67	110 Goerck street	Cleaning cellar	23 13
4541	June 15, 1867	11 Desbrosses street	Cleaning yard	5 00
4545	June 10, 1867	11 Laurens street	Cleaning yard	4 45
5102	July 29, 1867	435 East 16th street	Whitewashing halls	12 66
5103	June 24, 25, 1867	140 West 18th street	Whitewashing halls of front and middle houses	18 08
5108	June 17, 1867	312 1st avenue	Cleaning yard	6 50
5125	June 20, 1867	147 Lewis street	Cleaning cellar	6 75
5133	June 14, 1867	61 East Broadway	Whitewashing halls	9 64
5146	June 20 to 26, '67	20 Pearl street	Whitewashing walls and cleaning yard	67 19
5147	June 17, 18, 1867	216 East 38th street	Cleaning vacant lot	39 50
5157	July 2, 1867	S.E. cor. 60th st. and 3d ave	Cleaning yard	8 50
5164	June 24, 1867	210 East 22d street	Cleaning cellar and yard	9 50
5170	June 21, 1867	102 East 11th street	Whitewashing two rooms	3 09
5192	July 9, 10, 11, '67	16 Doyer street	Whitewashing basement and cleaning cellar	35 72
5198	June 20, 1867	105 East 43d street	Cleaning cellar	13 00
5559	June 27, 28, 29,'67	349 East 34th street	Whitewashing halls	12 10
5562	June 24, 25, 1867	42 East Broadway	Cleaning and whitewashing halls	12 19
5564	July 2, 1867	637 West 42d street	Putting up new leader	6 90
5566	June 27, 28, 1867	436 East 21st street	Whitewashing halls	14 94
5567	June 28, 1867	438 East 21st street	Whitewashing halls	14 66
5569	June 27, 1867	510 East 16th street	Cleaning cellar	1 50
5572	June 27, 28, 1867	440 East 21st street	Whitewashing halls	14 66

No. of order.	Date of execution.	Premises.	Nature of work.	Expenses.
5573	June 25, 1867	99 9th avenue	Cleaning alley	$1 50
5593	June 28, 1867	119 Broome street	Repairing roof	5 00
5684	July 1, 1867	443 11th avenue	Cleaning cellar	19 75
5685	July 6, 1867	451 11th avenue	Cleaning cellar	19 75
5686	July 5, 1867	447 11th avenue	Cleaning cellar	19 75
5687	July 2 and 3, 1867	445 11th avenue	Cleaning cellar	38 25
5689	July 1 to 6, 1867	143 Mulberry street	Whitewashing walls of front and rear building	43 05
5801	July 1 to 5, 1867	384 Bowery	Cleaning cellar and yard	41 55
5845	July 8, 1867	595 1st avenue	Cleaning and whitewashing cellar and repairing roof	16 49
5848	July 8, 1867	306 West 39th street	Cleaning cellar	11 24
5850	July 10, 1867	171 Attorney street	Whitewashing cellar	6 39
5969	July 11, 1867	N. S., E. 57th st., M.P. Court	Cleaning yard	1 75
5983	July 8 and 9, 1867	593 1st avenue	Cleaning cellar, repairing roof, whitewashing halls	32 27
6023	July 10 & 11, 1867	40 Avenue C	Whitewashing halls and cleaning cellar	14 94
6203	Nov. 1, 1867	42d street near 2d avenue	Cleaning vacant lot	8 75
6206	July 11, 1867	305 East 24th street	Cleaning cellar	3 00
6207	do	236 East 36th street	Cleaning cellar	3 00
6210	July 19 & 20, 1867	105 Hester street	Whitewashing halls	9 29
6213	July 11, 1867	97 East 11th street	Cleaning premises	2 13

6214	do	99 East 11th street	Cleaning premises	2 12
6216	do	71 Hester street	Cleaning cellar	12 82
6229	do	14 Crosby street	Cleaning cellar	12 85
6231	do	646 East 16th street	Cleaning cellar and yard	9 60
6237	July 12 & 13, 1867	514 East 14th street	Cleaning and whitewashing cellar and repairing seat in water-closet	9 89
6240	Aug. 20 to 23, 1867	53 Oak street	Whitewashing walls of front and rear house	16 40
6265	July 18, 1867	10 Doyer street	Whitewashing halls and cleaning alley	10 92
6275	July 16 & 17, 1867	28 East Broadway	Whitewashing halls	20 33
6283	July 16, 1867	277 Greenwich street	Cleaning yard	9 50
6288	July 13 & 15, 1867	47 Christie street	Whitewashing halls and cleaning yard and cellar	10 94
6300	July 22, 1867	351 East 31st street	Repairing skylights	1 25
6311	July 25, 1867	397 3d avenue	Whitewashing halls	6 43
6457	July 29, 1867	631 2d avenue	Cleaning cellar	6 39
6463	July 25, 1867	399 East 12th street	Cleaning cellar	3 00
6466	do	413 East 12th street	Whitewashing	75
6473	July 26 & 27, 1867	282 1st avenue	Whitewashing walls of house	17 55
6507	July 29, 1867	279 West 39th street	Cleaning yard	6 00
6512	July 31, 1867	18 Laurens street	Repairing roof and scuttle	10 50
6587	do	353 West 41st street	Whitewashing halls	14 33
6588	Aug. 2 and 3, 1867	440 West 28th street	Whitewashing halls	11 18
6603	July 26 & 27, 1867	18 Marion street	Whitewashing halls	4 88
6607	Aug. 12, 1867	57 Gold street	Repairing roof, gutter and leader	5 00
6731	July 26 & 27, 1867	229 1st avenue	Whitewashings halls	11 03
6832	Aug. 12, 1867	459 West 35th street	Clearing vacant lot	6 00

No. of order.	Date of execution.	Premises.	Nature of work.	Expenses.
6837	Aug. 9, 10, 12, '67	571 1st avenue	Whitewashing rooms, halls, cleaning cellar and repairing roof	$28 58
6918	August 13, 1867	N. side 128th st., n. 2d av	Cleaning cellar	18 11
6951	August 12, 1867	16 5th street	Cleaning cellar and repairing roof	3 00
7065	Aug. 14, 15, 1867	417 East 24th street	Whitewashing halls	5 09
7066	August 15, 1867	407 and 409 East 20th st	Whitewashing halls	4 78
7084	Oct. 3, 4, 1867	106 Greenwich street	Whitewashing walls, ceilings and hall	14 43
7154	August 24, 1867	127 Eldridge street	Cleaning cellar	3 00
7204	Aug. 27 to 31, '67	239 East 28th street	Whitewashing walls of front and rear houses	19 15
7208	Sept. 2, 1867	525 3d avenue	Cleaning back area	3 00
7224	Sept. 23, 1867	25 West 23d street	Cleaning cellar	1 50
7275	August 21, 1867	14 Baxter street	Cleaning privy-house	1 50
7483	August 26, 1867	512 West 33d street	Cleaning cellar	5 75
7484	Aug. 24, 26, 1867	510 West 33d street	Cleaning cellar	5 75
7487	Sept. 14, 16, 1867	76 10th avenue	Washing wood-work of halls and cleaning cellar, &c	9 70
7635	Sept. 5, 1867	84 Centre street	Cleaning alley	4 50
7659	Sept. 4, 1867	20 Clarke street	Cleaning yard	4 50
7727	Sept. 9, 10, 11, '67	428 7th avenue	Whitewashing halls and cleaning cellar and yard	14 85
7776	Sept. 2, 1867	117 Spring street	Cleaning cellar	4 50
7796	Sept. 20, 21, 1867	657 2d avenue	Whitewashing halls	9 78

7927	Oct. 16, 1867	111 West 16th street	Disinfecting privy	1 50
7935	Sept. 28, 1867	202 West 36th street	Repairing privy-house	4 43
8030	Sept. 23 to 25, '67	413 West 16th street	Whitewashing walls and repairing roof	28 22
8098	Sept. 12, 13, 1867	573 1st avenue	Cleaning cellar	9 30
8141	Sept. 6, 1867	215 Hester street	Whitewashing halls	3 10
8145	Sept. 21, 1867	72 Market street	Putting up new leader	18 00
8289	Sept. 17 to 23, '67	634 2d avenue	Whitewashing walls, repairing roof and hydrant drain	36 63
8568	Sept. 19, 1867	278 Monroe street	Disinfecting privy	1 50
8577	Sept. 27 to Oct. 2	32 West 44th street	Whitewashing walls	33 93
8902	Sept. 26, 1867	55 Christie street	Whitewashing area and basement	3 43
8914	do	300 Mott street	Cleaning cellar	4 75
9027	October 5, 1867	635 West 42d street	Cleaning basement	4 50
9142	October 10, 1867	57 Warren street	Repairing leader	11 00
9221	Oct. 18 to 21, '67	282 8th avenue	Whitewashing halls	10 11
9250	Oct. 8, 9, 1867	223 Avenue B	Whitewashing halls and cellars	8 14
9295	Oct. 8, 1867	441 East Houston street	Cleaning rear area	3 00
9396	Oct. 11, 1867	64 Crosby street	Cleaning cellar	5 70
9756	Oct. 24, 1867	349 East 32d street	Cleaning yard	75
9761	Oct. 23, 1867	175 Wooster street	Cleaning cellar	4 25
10004	Oct. 31, 1867	351 East 34th street	Cleaning privy-house	1 00
10032	Oct. 30, 31, 1867	67 Baxter street	Whitewashing halls	4 30
10091	Oct. 31, 1867	102 Mott street	Cleaning privy-house	1 09
				$2,118 13

Besides the work done in the execution of specified orders of the Board, as indicated above, this department has, in compliance with instructions of the Board, employed a squad of men in keeping the street gutters clean in the filthier portion of the city below Canal street.

The expenses attending the latter have been paid by the Comptroller, from the appropriation made for extra cleaning of streets not sufficiently provided for in the street-cleaning contract.

As a general rule, the work performed by this department has given satisfaction to the owners of property.

The prices charged have been carefully supervised, and the bills kept down to the actual cost of the execution of the orders. In regard to the execution of the orders requiring simply cleansing, whitewashing, and minor repairs, there has been almost no complaint whatever, and, with very few exceptions, the bills are promptly paid. In the Engineer Department, by far the greatest opposition has been regarding repairs upon leaky roofs; in fact, the trouble experienced in effecting these repairs, and in collecting the bills therefor, is so great, that I join the Engineer in respectfully recommending that, hereafter, such repairs be made the subject of separate orders, to be enforced, not by execution by this department, and subsequent collection of the cost, but by suit for penalty.

The increased disposition on the part of citizens to comply with the orders of the Board, has very greatly diminished the necessity for the execution of orders by this department, and caused a consequent reduction in the number of employees and amount of material.

The *property* now on hand is as follows:

Horses		4
Wagons, heavy		1
do light, covered		2
Harness, heavy, double		1
do light, single		2
Disinfectants:		
Chloride of Lime	lbs.,	38,400
Sulphate of Iron	lbs.,	1,200
Carbolic Acid	galls.,	180 (3½ bbls.)
Coal Tar	bbls.,	11½
Sal Soda	lbs.,	100

Tools:

Shovels, hoes, brooms, etc. (as per enclosed inventory).

Hospital Property:

Bedsteads, bedding, office, kitchen, and table furniture (as per enclosed inventory).

Very respectfully, your obedient servant,

EDWARD B. DALTON, M. D.,

Sanitary Supt. Metropolitan Board of Health.

REPORT OF THE SANITARY SUPERINTENDENT
ON
TENEMENT HOUSES.

OFFICE SANITARY SUPERINTENDENT,
METOPOLITAN BOARD OF HEALTH,
NEW YORK, *January* 27, 1867.

To the Secretary of the Metropolitan Board of Health:

SIR: In obedience to instructions from the Metropolitan Board of Health, received on the 24th instant, I beg respectfully to submit the following report upon tenement houses in the cities of New York and Brooklyn. In the latter city, the number of such houses is comparatively small, being but two thousand four hundred and six (2,406), and while some of them are deficient in light, ventilation and sewerage, there are but very few conspicuous for their filthy and neglected condition, and almost none of such a character as to be public nuisances.

In New York the case is very different. The number of tenement houses in this city is eighteen thousand five hundred and eighty-two (18,582). The following table shows the manner of their distribution in the various wards, and the number which are in bad sanitary condition:

Wards.	Number of tenement houses.	In bad sanitary condition from neglect.	In bad sanitary condition from any cause.
1	275	137	175
2	----	----	----
3	40	20	24
4	500	250	300
5	300	150	180
6	600	300	360
7	1,847	370	890
8	850	322	546
9	650	280	434
10	430	86	196

Wards.	Number of tenement houses.	In bad sanitary condition from neglect.	In bad sanitary condition from any cause.
11	2,400	480	1,200
12	208	104	104
13	550	110	275
14	550	236	346
15	200	86	132
16	1,300	216	433
17	2,395	478	1,138
18 and 21	2,276	1,138	1,516
19	761	38	380
20	1,250	213	417
22	1,200	800	800
	18,582	5,814	9,846

These figures are derived from the reports of the Sanitary Inspectors, and represent the number of houses occupied by several families living independently of each other, but having a common right in the halls, stairways, yards, cellars, water-closets or privies and sinks.

It will be seen from the foregoing table, that of the entire number of tenement houses in the city of New York fifty-two (52) per cent are in bad sanitary condition, that is, in a condition detrimental to the health, and dangerous to the lives of occupants, and sources of infections to the neighborhood generally. Thirty-two (32) per cent are in this condition purely from overcrowding, accumulations of filth, want of water-supply, and other results of neglect. The danger to public health, however, especially in the event of an epidemic, which results from these conditions, is not adequately expressed by these figures, for while in the upper and newer parts of the city the tenement houses are comparatively well built and properly locked after, there are many localities where almost entire blocks are composed of such houses alone, all of which are in bad condition, and where the danger is greatly increased by this very grouping. The worst localities in this respect, as will be seen by reference to the table, are in the lower portions of the city, at intervals, and along its eastern and western border, as high as Forty-second street on the east, and Sixtieth street on the west.

The causes of improper sanitary condition of tenement houses may be classed under two heads, viz: 1st. Those due to faults in the original construction of the building, and, 2d. Those due to overcrowding and neglect.

Prominent under the first head are, 1*st. The custom of erecting a front and rear tenement house on a single lot.* By this plan the rear end of each house is within short distance, varying, in different instances, from six inches to two feet, of the rear end of the rear house situated upon the reverse lot fronting on the next street above or below as the case may be. There are many blocks of houses built in this manner. The result is, that the back rooms of the rear houses are entirely cut off from direct sunlight, and the ventilation is necessarily very imperfect. These spaces, too, between houses thus contiguous, are always damp, and very frequently, from being made the receptacle for excrement, urine and garbage, gives off most offensive emanations, which are either diffused through the houses, or compel the tenants to keep the rear windows constantly closed, and thus destroy the slender means of ventilation, which their presence might otherwise afford. Even the front rooms of such houses suffer in a similar manner, though not to so great a degree, the presence of the high front house, separated only by a narrow court, allowing but a meagre share of direct light and air.

2*d. Deficient Ventilation* is a very common evil in tenement houses. The halls are close, rarely, except the lower floor, extending to either front or rear wall, so as to admit of a window. Therefore, the tenants keep their room doors closed. The hall is entirely cut off from the external atmosphere, save by the chance opening of the street entrance. The dwelling rooms have no provision for ventilation, save such as may be afforded by the windows, which are usually on but one side of the room. The sleeping rooms open from these dwelling rooms, and are simple closets, with absolutely no ventilation.

3*d. Absence of Light.*—For the same reasons that the halls are unventilated, they are also dark and damp. No sunlight can come there. The space allowed for the hall is so narrow, that a proper "well" is impossible, and no adequate skylight provided. A large proportion of these halls are so dark that at mid-day it is impossible to discern objects there without opening some adjacent room door. In many instances the floors are damp and rotting, and the walls and bannisters sticky with a constant moisture.

4th. Basements or Cellars.—The basements or cellars are often entirely below ground, the ceiling being a foot or two below the level of the street, and are necessarily far more damp, dark, and ill-ventilated than the remainder of the house. Many of these are constantly occupied, and not unfrequently used as lodging houses, where there is no communication with the external air, save by the simple entrance, and in which the occupants are entirely dependent upon artificial light by day, as well as by night. Many of these habitations in the lower streets of the city are subject to regular periodical flooding by tide-water, to the depth of from six inches to a foot, frequently so much so as to keep the children of the occupants in bed until ebb-tide.

5th. Deficient Drainage.—A large number of tenements have no connection with the sewer, and no provision for drainage but surface gutters, by which all house-slops, not infrequently mixed with urine, and even fæcal matter, are conducted across or immediately beneath the sidewalk into the street-gutter, where, from lack of the proper grade, they remain stagnant and putrefying during the summer, and where, during the winter, they freeze and turn the flow into the cellars. Indeed, at all seasons, much of the fluid material deposited by the tenants in the yards, finds its way into the cellars, and it is by no means exceptional to find entire blocks of houses where the cellars are constantly flooded, to a greater or lesser extent, from this cause. In other instances, the material from the different sinks, wash-basins and water-closets on the successive floors, are conducted by pipes, devoid of traps, to a common wooden drain of inadequate dimensions, running immediately beneath the basement floors of contiguous houses and thence passing into the street-sewer. The current through these drains is generaly sluggish, and frequently obstructed by accumulations of solid material, or by the decay and consequent breaking down of the drain itself. In the event of such accidents, collections of stagnant and offensive fluids take place beneath the basement floor, or in the cellar, where such exists, the whole house becomes permeated with a disagreeable stench; the cause of which is not discovered until sickness or intolerance of the odor leads to complaint and investigation. These drains are not infrequently furnished with ventilators, consisting of flues, connected immediately with the interior of the drain, and thence passing up through the house and having openings in the various apartments through which the gases resulting from decomposition below are diffused.

The lack of proper traps gives rise to the same difficulty, the emanations from the stagnant contents of the drain, finding their way up through the waste-pipes, and escaping into the halls and rooms.

6*th*. *Inadequate Provision of Water-closets or Privies.*—Where water-closets exist, they are frequently of imperfect construction, being without traps or sufficient provision for flushing them. Where privies are relied upon, they are often carelessly built, devoid of sewer connection and inadequate in number, there frequently being but one for the accommodation of from sixty to a hundred persons.

These privies are usually in the yards, but sometimes they are in the houses, and consist of mere "wells," extending from the upper floors to the cellars, and provided with an opening an seat on each floor, with no means of flushing them, and nothing to prevent the constant diffusion throughout the house of the emanations from the material accumulated below.

Such, with the occasional absence of Croton water, and the frequent lack of fire-escapes, are the most prominent faults of construction in tenement houses in this city. Evils of the second class, arising from overcrowding and neglect, are, accumulations of garbage, excrement, and filth of every description in the yards and cellars, broken down and overflowing privies, filthy halls, stairways, water-closets, and rooms, leaky roofs, and broken windows, all these aggravate the results of faults of coustruction, and render these dwellings unfit for habstation.

To the filthy habits of the occupants and especially to the indifference of the owners, is due in great measure the origin and continuance of these terrible sources of disease.

Some of these tenements are owned by persons of the highest character, but they fail to appreciate the responsibility which rests upon them. They are frequently entirely ignorant of the condition of their property, and either trust its care to an agent, who, of course, feels still less responsible, and whose duty is, in the main, to so manage the property as to be of the greatest pecuniary advantage to his employer, or lease them to "middle men," as they are called, who have no interest in the property except its immediate profits, and who destroy even its original ventilation, and aggravate its defects, by dividing the rooms into smaller ones, and crowding three or four families in a space originally intended for one. The latter is frequently the case with houses not originally intended for tenement houses, but which are abandoned private residences, arranged, not for the accommodation of many, but simply for one family. These middle men hire these old houses for a term of years from the owner, who is glad to get rid of them until he is ready to tear them down and improve the property, while, meantime, it is not for his interest, nor that of the lessee, to make improvements or repairs.

Disease, especially in the form of fevers of a typhoid character, is constantly present in these dwellings, and every now and then becomes epidemic in one or more of them. In one of them it was found that twenty cases of typus had occurred during the previous year.

During last summer, as through every epidemic, tenement houses were the first resting-place and permanent abode of cholera.

Very respectfully, your obedient servant,

ED. B. DALTON,
Sanitary Superintendent,
Metropolitan Board of Health.

REPORT OF THE SANITARY SUPERINTENDENT RECOMMENDING IMPROVEMENTS IN THE CHARACTER AND CONDITION OF TENEMENT HOUSES.

OFFICE SANITARY SUPERINTENDENT,
METROPOLITAN BOARD OF HEALTH,
NEW YORK, *February* 7th, 1867.

JOHN O. STONE, M. D.,
Chairman Sanitary Committee, Metropolitan Board of Health.

Sir—In accordance with your instructions, I beg respectfully to lay before you certain recommendations regarding improvements in the *character and condition of tenement houses* in the cities of New York and Brooklyn, especially the former.

The custom of erecting a front and rear tenement house on a single lot, should, in my opinion, be discontinued, as the only way by which the evils mentioned in my report of the 27th January, as arising from this practice, can be avoided. The front houses can then be made deeper, and yet leave sufficient space between them and the abutting houses from the next street to allow of proper provision for ventilation and light.

To improve the ventilation and light of existing tenement houses, several plans are feasible, which involve comparatively but moderate expense. To ventilate and light the halls, the hall-bedrooms at one end on each floor may be dispensed with, thus giving the halls the benefit of the windows. Into the hall thus improved, a moderate-sized window, three square feet in area, should be cut from the dark bedrooms—which now have no opening save the door from the dwelling-rooms. In the better class of houses these windows already exist, and are of great value.

I beg to invite especial attention to a plan suggested by the Engineer of the Board, which is not only admirably adapted to purposes of ventilation and light, but at the same time secures the safety of tenants in case of fire. His plan is to do away altogether with the present stairway, and substitute one in a tower separate from and in the rear of the house, and connected therewith by a bridge at each story, protected by a suitable railing or sheathing. The space now occupied by the stairway is to be left vacant, and a large ventilator and sky-light placed in the roof immediately over the successive openings thus left in the floors of the different stories; these openings, also, to be surrounded by a proper railing or high sheathing. It is a well known fact, that when fire breaks out in a tenement house, the stairway is often the first thing destroyed, and excepting in the rare instances where iron ladders have been attached outside the house, the tenants are entirely cut off from escape. So many terrible casualties have occurred from this cause, that the demand is certainly most imperative for some change which shall secure greater safety to the thousands who must necessarily live in these tenement houses, and who are themselves powerless to make any provision for their own protection. There are in this city thousands of these houses, many of them models in other respects, where there is absolutely no possibility of escape for the tenants in the upper stories should a fire break out in the lower portions, and not be speedily extinguished. Many are so much higher than the adjacent buildings, that a fire-escape leading out upon the roof is of no avail, and, as I have already stated, the provision of external iron ladders is very exceptional.

The adoption of outside staircases, as advocated by Mr. Worthen, would, thus, seem to obviate, so far as can be done by construction, very many, if not all, of the remediable evils attaching to the tenant house system. It would afford ample light and free ventilation to the halls and rooms. It would diminish to a vast degree the loss of life by fire, and would afford opportunity, by means of the outside tower, of placing the water-closets and sinks outside the body of the house, and thus relieve the latter of one great source of infection. An instance of the practical and successful working of this plan is described in the accompanying report of Sanitary Inspector Janes, upon No. 135 West Twenty-sixth street, with diagram. With the exception of the openings in the hall floors, and the fact that the tower communicates throughout its entire height with the body of the house, it corresponds with the plan proposed. The plan here described by Dr. Janes answers admirably for houses where there are but two families on each floor, but among the poorer classes, where there must be four families on each floor, the tower should only be connected by bridges, so that there may be abundance of light and air in the rear dwelling-rooms. In cases where front and rear houses exist, both may be connected with one tower situated between the two.

In case there are two dark bedrooms opening from one dwelling room, a communicating window should be cut between the two. In addition to these windows, the bedrooms should also be ventilated by shafts running to the roof, and a separate flue for each room, as otherwise the contaminated air from the rooms below would enter those above. This plan is carried out in the best tenements, and is very successful.

To remedy deficiency in drainage, it is only necessary that the plumbing of the house should be on the proper plan, now fully recognized by architects and plumbers, and where sewers do not yet exist, that the grading of the yards and the surface-gutters should be faithfully attended to.

A proper system of construction, however, will, of itself, be of no avail in tenement houses, unless accompanied by constant watchfulness. Rooms will be overcrowded; windows and doors will be persistently closed; apertures for ventilation will be stuffed with rags, etc.; refuse matters will be thrown into the sinks and water-closets, clogging the waste-pipes and destroying the efficiency of the plumbing, however perfect; drains will be broken and obstructed; filth will accumulate in the cellars and halls; and the model tenement house will soon become as unwholesome as though none of these precautions had been taken.

Reformation in this matter can, in my opinion, be made permanent only by forcing upon the owners of tenement property the responsibility of its management. Weekly, or, if necessary, more frequent inspection of every tenement house, from garret to cellar, should be made by the owner or other competent authority, who should exact from each tenant strict compliance with such rules as are necessary to the salubrity of a dwelling, and any tenant who persists in living in a manner detrimental to the health of his neighbors, should no longer be allowed to remain. Such a system would soon improve the habits of the tenants, and the certainty of a weekly inspection would at least secure a vigorous cleansing at those times, which, of itself, would prevent the terrible accumulations of filth which are now a disgrace to so many property owners.

A competent housekeeper should also reside on or near the premises, whose duty it should be to keep the halls, water-closets and other public portions of the house clean and in repair. It is in great measure due to the neglect of these reasonable precautions that so much labor and expense is forced upon the public for sanitary purposes.

Corroborative of the statements I have made, as the results of observation, I beg to submit the few accompanying reports of the Sanitary Inspectors, and I would respectfully invite especial attention to that of Dr. E. H. Janes, upon No. 135 West Twenty-sixth street, and that of Dr. J. L. Brown, upon No. 89 Perry street, as showing that the suggestions made in this report are reasonable and practicable, and are actually carried out where the owners of property are really desirous of doing what is right.

I am, sir, very respectfully,
Your obedient servant,
ED. B. DALTON,
Sanitary Supt. Metropolitan Board of Health.

REPORT OF THE SANITARY SUPERINTENDENT ON SLAUGHTER HOUSES.

OFFICE OF SANITARY SUPERINTENDENT,
METROPOLITAN BOARD OF HEALTH, *April* 20, 1867.

To the Secretary of the Metropolitan Board of Health:

Sir—I beg respectfully to remind the Board of Health that it is now more than a year since their attention was first directed to the evil results of the system of slaughtering animals in the built-up portions of this city, and that, since that time, every effort has been made by the officers of the Board to enforce such regulations regarding the slaughter-houses as might mitigate, and, if possible, do away with these evils, or at least so far control them as to enable those engaged in slaughtering to arrange their business with a view to an ultimate removal of it from the city. The butchers were called together, in conference, and requested to co-operate with the Board in abating the nuisances with which their business was surrounded, in such a way, and with such reasonable delay as should result in the public good, and at the same time not entail pecuniary loss upon them. The experiment has failed. Although a few of the places where slaughtering was carried on with the least regard to the health and decency of the neighborhood have been closed, still even this partial reform has been attended with a great deal of labor and expense to the Board, and there still remain in the city, to-day, one hundred and forty (140) slaughter-houses, whose existence is a nuisance, detrimental in the highest degree to the health, and dangerous to the lives of the citizens. Many of these are still carried on without regard to cleanliness or decency, are constantly filthy and neglected, and the sources of the most noisome and injurious exhalations. It has been found impossible, with the moderate force of sanitary inspectors at our command, to continue such constant supervision over these places as shall keep the Board apprised of their condition, and so compel a conformity to a prescribed standard. Aside from this, however, the experience of the past year has proven that no standard can be prescribed which will render the business of slaughtering animals other than a complicated and most offensive nuisance when carried on in the built-up portions of the city. The cattle must be driven through the public streets, upon the sidewalks, as well as between them, defiling the pavement and disturbing the peace, and jeopardizing the lives of the citizens.

I need not remind you how frequently ladies and children are driven in terror from the sidewalks and crossings of our best avenues, to seek refuge in the stoops and areas from these herds of frightened and half-crazed cattle, a terror for which there is ample reason in the terrible and not infrequent "accidents," so-called, where persons have been shockingly gored to death by these creatures, or run down and more or less injured. Indeed, it seems unaccountable how this wanton and most unnecessary exposure of human life should so long have been tolerated; a consideration which, of itself, would seem sufficient to banish the business of slaughtering from the city.

When the cattle have been finally goaded and frightened along to their destination, their condition is such as to render their immediate slaughter and preparation for the market most improper and injurious, and the conditions under which they are now placed render the usual delay of a few hours of but little avail. They are herded in small, ill-ventilated pens, in many cases so crowded as to entirely prevent the cattle from moving about, where they are kept, without food, barely long enough for the fever produced by the journey to subside, when they are killed, and at once distributed to consumers. While the cattle are thus penned up, they are the source not only of the greatest discomfort, but of great injury to the health of the community. This is especially true as regards children. The constant bellowing of the foot-sore and homesick cattle, the ceaseless moaning and bleating of the calves and sheep, and the squealing and grunting of the pigs, disturb, and, indeed, oftentimes entirely destroy the sleep of the occupants of the surrounding tenements, which are generally filled with the laboring classes who can ill afford to be thus robbed of their natural rest.

The emanations from the animals themselves, thus kept in unhealthy condition, and from their excretions, keep the atmosphere constantly tainted, while the hordes of rats, flies, and vermin which they attract, render a residence in their vicinity, especially in hot weather, almost intolerable. Indeed, none but those who have personally investigated this matter can form any idea of the suffering to which the inhabitants of these dwellings are subjected during the summer months. The houses are crowded, and the air within them becomes, to the last degree, foul and unwholesome; and yet any attempt on the part of the occupants to improve their condition, by opening the windows for fresh air, only gives entrance to noisome gases and swarms of insects.

In regard to the additional nuisances arising from the actual killing of the animals and the subsequent disposal of the carcass, I beg to quote from the inspectors' reports.

1. Inspector Emerson, in a report of the 16th instant, says:

"In the process of slaughtering and dressing said animals, the floor, and much of the other wood-work of the building becomes necessarily saturated with various animal liquids, either at the time highly offensive, or prone to become so as the result of rapid decomposition, and the blood and other liquid refuse necessarily resulting from such slaughtering, being washed into the sewer, tend to clog and obstruct said sewer, and then are, or rapidly become, putrid and highly offensive in said sewer, and thus contaminate the atmosphere of the many dwellings and other buildings connected with it in its long course to its outlet. The existence of these slaughter houses necessitates the carting of much dung and offal for a long distance through the public streets, which substances, and the vehicles and receptacles in which they are conveyed are, especially in summer, highly offensive; and, in spite of all the cleanliness that can be exercised, the unavoidable presence, about the slaughter houses, of large quantities of animal matter, such as blood, dung, hides, offal, etc., the saturation of the ground with the liquid portions of these, and the exhalations from them, and from the animals themselves, contaminate the air, which must at once enter the rooms of adjacent dwellings."

2. Inspector McLane, in his report of the 16th instant, says:

"During the hours devoted to the killing of animals, the condition of these houses is necessarily filthy. The slaughtering necessitates the shedding of blood in enormous quantities. This blood is either caught in some receptacle, and saved for purposes of refinery, or it is allowed to flow into the public sewers. In the former case, it has to be transported in barrels a considerable distance; in the latter it clogs the sewers, and often has to flow through them for miles, before reaching an outlet into the river. A large amount of offal is accumulated; and even if this be removed with dispatch and regularity (which is seldom the case), such removal must take place through the streets, and the emanations from the barrels of *effete* matter, in warm weather, are of the most offensive nature."

3. Inspector Maclay, in a recent report, says:

"The blood and offal, not being promptly removed, undergoes putrefaction, filling the air with pestilential odors, and becoming a prolific source of disease. The increasing prevalence of cholera infantum, typhoid fever, erysipelas, and other diseases, may be traced in part to this cause. The large quantity of water necessary to wash out the blood, fæcal matter, and other impurities from these buildings oftentimes fails to be carried off by the drain, although it may be unobstructed and a have a direct connection with the sewer, in consequence of the slaughter-house itself being defectively constructed. The bloody water and filthy drainage finds an outlet into the cellars of dwellings in the immediate vicinity, and remains there to putrefy. Recently, I noticed two such cases, and made complaint of them to the Board. One of these slaughter-houses, No. 304 West Forty-fifth street, was built directly adjoining a tenement-house; and, although the slaughter-house connected with the sewer in the street, the drain failed to carry off the blood and other fluids, which leaked through the walls into the cellar of the tenement-house, covering its entire surface, and presenting the appearance of a large pool of blood. The offensive odor therefrom vitiated the atmosphere of the whole building."

4. Inspector Packard, in a report upon his district, says:

"After the slaughtering is finished, the hides, hoofs, heads and offal are loaded into wagons and carried through the streets, offensive to sight and smell, and to the last degeee disgusting."

5. Inspector Paine, in his report, says:

"That the business of slaughtering animals necessitates the collection and confinement for a certain time, on said premises, of cattle in greater number than is allowed by the Board in any other kind of premises within the built-up portions of the city; which cattle, by their lowing and bleating, cause an undue disturbance of the neighborhood, and contaminate the air by their dung and urine."

6. Inspector Janes, in speaking of the slaughter-houses in his district, says:

"The disturbance of persons residing in the vicinity occasioned by the large number of animals often confined in a pent-up yard, the annoyance created by the collection of flies, cats and dogs around the premises, and the consequent depreciation in the value of the neighboring property, would seem cause sufficient to render the removal of slaughter-houses from the city a great public benefit."

7- Inspector Morris, in speaking of the demoralizing effect of slaughtering, as at present conducted, says:

"Most of them are surrounded by tenement houses whose windows look down directly upon the operations carried on therein; and it is from the familiarity with these scenes of blood that the minds of the young of these localities become perverted; and it is a notorious fact that the roughest, vilest and most lawless boys of the city are those who daily witness them, and become accustomed to such brutality."

8. Inspector White calls attention to the following important fact:

"Most of the drainage, indeed all of it, from the slaughter-houses on the east side of the city passes off through the main sewer in East Houston street. The sewer empties into the East River at a point where the shore of the island forms a kind of by which is protected from the influence of the ebb and flow of the tide. The river at this point can be seen discolored by blood; and in the summer season, the exhalations and odors arising therefrom are most offensive, and have been made the subject of complaint by those who are compelled to cross the river by the Williamsburg ferry."

9. Inspector Brown sums up the report upon this subject, as regards his district, by saying:

"In fine, I believe there is not a single slaughter-house in my district which is not regarded as a serious nuisance by those residin its vicinity, and it is incredible that there should be such perfect unanimity of opinion among persons of every grade of intelligence and social position, without there existed some very good reason for it."

Such are a few quotations from various reports upon this subject. They hardly need a comment. The Sanitary Inspectors have, during the past year, given strict and constant attention to this matter, and their observations have everywhere been sustained by the repeated and bitter complaints of the poor people who have so long suffered from these evils. There is no denying that, in very many instances, the proprietors of these places have exerted themselves to the utmost to render their establishments as inoffensive as possible. They have floored and drained, and whitewashed; they have endeavored to secure the prompt removal of offal and manure; they have made the freest use of Croton water, and have kept good their sewer connections. But, with all this, while they certainly have mitigated, they have failed to abate the nuisance. The most conscientious and careful butcher cannot prevent a slaughter-house being a nuisance to his immediate neighbors, and to the city generally.

A year ago it was urged, with some reason, that the sudden expulsion of slaughter-houses from the city would so embarrass the business as to seriously interfere with the necessary supply of meat. Now, however, this is no longer the case. Extensive and thoroughly appointed abattoirs are now in operation in the immediate vicinity of the city, and in localities convenient to the public markets of sufficient number and size to supply meat, fully and promptly, to the cities of New York and Brooklyn, even if all the private slaughter-houses should be closed to-morrow. These abattoirs are supplied with every facilities, not only for slaughtering animals, but for utilizing at once, within the same enclosure, all the refuse material, while it is still fresh and inoffensive, and so the nuisance arising from its transportation through the streets, its accumulation at the offal dock, and its removal thence, at an expense to the city of fifteen thousand dollars ($15,000) annually, and its presence in the harbor, and especially along the shores of Staten Island, from being dumped from the offal boats, will be avoided. A far less important, but still gratifying fact is, that experience for the past few months has proven that, by the use of abattoirs, cattle can be slaughtered, and the meat dressed and delivered at the public markets or elsewhere, not only in far better and more wholesome condition, but at a decidedly less rate of expense, than by the present system.

In view of the facts thus set forth, and as derived from the reports of the Sanitary Inspectors, I would respectfully but most urgently recommend that the further continuance of slaughter-houses in the built-up portions of the cities of New York and Brooklyn, be prohibited.

Very respectfully, your obedient servant,

ED. B. DALTON, *Sanitary Superintendent,*
Metropolitan Board of Health.

REPORT

OF THE

ASSISTANT SANITARY SUPERINTENDENT.

OFFICE OF ASSISTANT SANITARY SUPERINTENDENT,
METROPOLITAN BOARD OF HEALTH,
BROOKLYN, *December* 2, 1867.

E. B. DALTON, M. D., *Sanitary Superintendent:*

Sir: The work of the Board during the year has been prosecuted in this city with the most gratifying results. The absence of an epidemic, which in 1866 occupied the chief time of the Inspectors, gave them in 1867 an opportunity to devote their attention to the investigation of many nuisances in and around the city, whose existence was directly detrimental to the public health. The visits of an educated Sanitary officer always result in good. Few families fail to appreciate efforts made to promote their comfort and health. Every house in large districts has been visited; attention directed to existing sources of disease, the character of needed improvements explained; and so a class utterly ignorant of sanitary laws has received some instruction in that which, though primarily affecting their own welfare, has the most vital relations to the whole community.

The successful results are due mainly to the fact that many legal obstructions have been removed, and to the recognition of the power of the Board to compel the prompt abatement of nuisances which were regarded as violations of the Code of Sanitary Ordinances and of the Health Law of 1866.

I append a statement of the number of places visited, showing also for what purpose such visits were made.

	Places visited and reports made to Board.	Places visited and no cause of complaint found.	Places visited & violations of the Code & Health Law reported.	Places visited for investigation of contagious diseases.	Places re-inspected.	Total places visited.
1866.						
November	423	35	50	1	271	780
December	422	43	12	2	270	749
1867.						
January	294	15	31	6	304	650
February	314	352	160	8	147	981
March	129	99	357	6	328	919
April	262	153	439	7	399	1,260
May	149	129	315	6	404	1,003
June	218	198	480	8	442	1,346
July	216	277	415	20	928	1,856
August	142	136	504	3	725	1,510
September	147	153	256	8	860	1,424
October	289	167	274	12	940	1,682
Total	3,005	1,757	3,293	87	6,018	14,160

VIOLATIONS OF THE CODE OF SANITARY ORDINANCES AND OF THE HEALTH LAW OF 1866.

These were reported in cases where prompt action was required and where any delay would probably ensue, or obstruction be placed in the way of the execution of an order of the Board of Health. In nearly every case a notice was served upon the party violating the said code or law, giving him a sufficient time to abate the nuisance before legal proceedings were commenced. Extensions of time were granted upon these notices whenever the applicant could show reason for such extension, and in the great majority of cases, as will be seen by reference to the following statement, the notice was complied with and no further proceedings were taken. When the notice was found, upon reinspection, not to have been complied with, the party was brought before a justice of the peace and the case disposed of by him. In only one case was a jury trial had, and this resulted in the defendant being fined twenty-five dollars ($25). This mode of procedure was the only one by which a street contractor could be compelled to clean a filthy street or gutter, or to remove ashes and garbage. A contractor was arrested upon six warrants in one day, and fined twenty-five dollars ($25) for each offence. Other cases of this kind could be cited. All the swine were removed from the built-up portions of the city by this means; the business of swill and offal boiling has been discontinued, and many more of the larger nuisances, whose influence was felt far and wide, have been suppressed by reporting them as violations of the Code of Sanitary Ordinances and of the Health Law of 1866.

As to the efficiency of this mode of procedure, in comparison with the original plan of reporting premises to the Board as nuisances, we find that of the first hundred premises reported to the Board, subsequently to November 1, 1866, the nuisances upon forty-six have been abated. Of the first hundred nuisances reported as violations of the code, eighty-two have been abated. Of a hundred reports to the Board, the average time between the report and the abatement of the nuisance, was twenty-eight days. Of the same number of violations, the average time was twenty days.

The following statements show the number of nuisances abated during the year, how such abatements were effected, and the number of fines imposed:

Statement of nuisances that were abated as violations of the Code of Sanitary Ordinances and of the Health Law of 1866, *from November* 1, 1866, *to October* 31, 1867, *inclusive.*

Alleys cleaned	3
Areas do	6
do repaired	4
Barrels, filthy, removed (places)	1
Basements ventilated	1
Bone boiling (business of) discontinued	1
Breweries drained	5
Buildings, dangerous, secured	13
do do torn down	1
Butchers' shops whitewashed	9
Cattle yards removed	3
Cows removed (places)	26
Cellars filled	36
do drained	17
do cleaned	46
Cellar wall repaired	1
do dwellings vacated	25
Cesspools constructed	5
do emptied	59
do filled	3
Chimneys repaired	6
do constructed	1
Cisterns emptied	73
do filled	6
do repaired	19
do covered	9

Chemical factory improved	1
Distillery drained	1
Dogs removed (places)	2
Drains, surface, repaired	4
do do surface constructed	3
do do removed	5
do do cleaned	4
Factory drained	1
Families removed (places)	1
Fat boiling (business of) discontinued	6
Fowls removed (places)	4
Gas pipes, offensive (pile of), removed	1
Garbage removed (places)	8
Geese do do	4
Goats do do	4
Grain, decomposing do	1
Garbage boxes constructed	2
Gut cleaning (business of) discontinued	3
Gutters, streets, cleaned	18
do roof, repaired	4
do do constructed	2
do do cleaned	2
Hallways cleaned	2
Horse, diseased, killed	1
House, clapboards of, repaired	1
do walls of, cleaned	1
Hydrants repaired	2
do drained	1
Ice boxes connected with street gutters	20
Lots, vacant, cleaned	27
do filled	80
do drained	18
do graded	7
Meat, putrid, removed (places)	1
Manure factory improved	1
do heaps removed	20
do vaults repaired	5
do do constructed	45
do do emptied	4
do do covered	7
do do altered	1
Obstructions in street removed	1
Offal boiling (business of) discontinued	1
Oyster shells removed (places)	1
Piggeries abolished	182
Privy vaults emptied	1,239
do repaired	108
do filled	10
do removed	7

Privy vaults constructed	7
Privy houses do	1
do repaired	20
do cleaned	5
Rags removed (places)	1
Roofs repaired	12
Roof leaders repaired	62
do constructed	3
Rooms, filthy, cleaned	4
Sewer basins cleaned	3
do connections made	52
Shavings removed (places)	2
Sidewalks repaired	1
do cleaned	1
Slaughtering cattle (business of) discontinued	1
Snow and ice removed (places)	11
Soap boiling (business of) discontinued	1
Soil pipes cleaned	36
do repaired	12
Stables cleaned	17
do drained	12
do repaired	3
do removed	2
Stairways and stoops repaired	10
Streets cleaned	90
do repaired	1
Tannery drained	1
Vessel, cargo of, removed	1
do cleaned	1
Water barrel removed	1
do closets repaired	7
do do cleaned	7
do do trapped	1
do pipes repaired	6
Waste do do	18
do do cleaned	24
Well repaired	1
Woodhouse cleaned	1
Yards flagged	3
do graded	88
do drained	24
do cleaned	126

Statement of Violations of the Code of Sanitary Ordinances and of the Health Law of 1866, *determined from November* 1, 1866, *to October* 31, 1867, *inclusive.*

	1866.		1867.										
	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	Total.
Abated on preliminary notices	9	10	13	81	135	356	219	216	348	384	307	191	2,269
Abated and case dismissed with costs	8	7	1	5	4	24	36	35	58	56	41	12	287
Abated and case dismissed without costs	1	3	....	5	22	8	17	14	29	5	6	2	112
Abated and complaint withdrawn	4	....	....	....	3	6	3	1	17	6	12	6	58
Abated and judgment suspended	1	2	2	....	1	....	1	....	....	1	....	....	8
Abated and defendant fined $3	....	....	....	....	....	....	1	....	....	....	....	....	1
Abated and defendant fined $5	....	....	....	1	....	2	....	....	....	....	....	....	3
Abated and defendant fined $6	....	....	....	....	....	....	1	....	....	....	....	....	1
Abated and defendant fined $10	...	....	....	....	....	....	1	1	....	....	1	....	3
Abated and defendant fined $10 and costs	....	....	....	....	....	....	1	....	....	....	....	.. .	1
Abated and defendant fined $15	....	....	....	....	....	1	....	....	....	2	....	....	3
Abated and defendant fined $20	....	....	.. .	....	....	....	....	....	1	....	1	....	2
Abated and defendant fined $25	....	1	....	....	....	....	....	1	....	2	....	....	4
Partially abated and complaint withdrawn	....	....	....	....	....	....	....	1	....	1	1	2	5
Partially abated and dismissed with costs	....	....	..	...	....	....	....	....	2	1	....	....	3
Partially abated and defendant fined $25	....	....	....	....	....	....	....	1	....	....	....	....	1
Defendant fined $5 and ordered to abate	1	....	....	....	....	....	....	....	....	....	....	....	1
Defendant fined $7 and ordered to abate	1	....	....	....	....	....	....	....	....	....	....	....	1
Defendant fined $10 and ordered to abate	....	....	....	....	....	1	1	....	. ..	....	....	...	2
Defendant fined $15 and ordered to abate	....	....	....	....	....	1	....	....	....	....	....	....	1
Defendant fined $20 and ordered to abate	1	....	....	....	....	1	1	....	4	....	....	....	7
Defendant fined $20 and costs and ordered to abate	....	....	....	....	....	....	....	....	....	....	1	....	1
Defendant fined $25 and ordered to abate	....	....	....	....	....	....	7	3	1	....	....	....	11
Dismissed with costs	....	....	....	....	....	....	1	....	1	....	....	....	2
Judgment suspended	1	....	2	....	....	....	1	....	....	....	....	....	4
Complaints withdrawn	....	4	3	1	2	7	11	18	19	11	20	36	132
Complaints dismissed	3	....	....	....	....	....	2	....	4	....	....	....	9
	30	27	21	93	167	407	304	291	484	469	390	249	2,932

The Tenement-House Law.

Owing to the great number of complaints of citizens requiring investigation, the Inspectors were not able to devote much of their time to the inspection of tenement and lodging houses prior to the last two months. During this last-mentioned period almost all the work shown in the annexed statement has been done. The most of it has been done upon notices to owners, which state that certain modifications of the houses and their appurtenances are necessary to put them in a sanitary condition, and which express a hope that the owners or agents of the property will make the improvements indicated in the notice without the interference of the Board of Health. Fifteen days have been given upon these notices, and extensions of time have been granted whenever, in the judgment of the Inspectors, such extensions could properly be made. The willingness of the owners and persons in charge of this class of property to comply with the requests of the Board, is shown in the following table of improvements made in two hundred and eighty-one (281) houses reported as failing to fulfil the requirements of the tenement-house law.

Statement of the improvements made in tenement houses, from July 3 to October 31, 1867.

Cellars cleaned	8
do drained	3
do dwellings vacated	1
Cesspools emptied	3
do filled	3
Cisterns emptied	1
do filled	1
Fire escapes introduced	43
Garret cleaned	1
Hallways cleaned	13
do whitewashed	14
do (plastering of) repaired	2
Privy vaults emptied	39
do filled	31
Privies (sewered) constructed	32
Roof gutter repaired	1
Roof leader repaired	3
Roof repaired	1
Stairways (balusters) repaired	1

Transom windows introduced	170
Ventilators introduced	51
Yards cleaned	1
Yards connected with sewer	9
Waste pipes altered	1

The Shore of the Eighth Ward and of the Town of New Utrecht.

Since the organization of this department, complaints have frequently been made that dead animals, offal, and bedding were washed ashore on the beach between Hamilton avenue, in the Eighth Ward, and the Dyker meadow, below Fort Hamilton, in the town of New Utrecht. Any flood-tide, aided by a strong westerly, south-westerly, or southerly wind, will strew this beach with whatever floating material there may be in the waters of the harbor; the wind and tide, acting together, lifting such matters so high upon the beach that the next flood-tide will not take them off. If very offensive, and near any of the residences along the bay, they were buried by the proprietor of the property upon which they lie; if not, they were allowed to remain. The bedding, however, was carefully sought after. Rag-pickers regularly patrolled the beach, ripping open the beds, pillows, etc., and carrying off the ticking. Complaints at length became so numerous and pressing that during the month of June of the present year, two men were employed by the day to bury all refuse that might come ashore. It was soon evident that these two men were not able to dispose of all the matters driven upon these six miles of beach, and, therefore, during the months of September and October, the number of laborers was increased, and Mr. De Hart Bergen engaged personally to superintend the work. The shore was traveled over every day, all offensive and dangerous material removed, and not a single complaint has since been received at this office.

The importance of this work will be the more fully appreciated when it is recollected that the fearful epidemic of yellow fever which found so many victims in this part of the district during the summer of 1856, seemed traceable in some degree to the bedding which had been thrown overboard from the vessels at Quarantine and washed upon the shore. It is hoped that the removal of the Quarantine will partially abate this nuisance, but until the contractors for the removal of offal and dead animals from the cities of New York and Brooklyn are compelled to so load their scows that none of the cargoes will be washed overboard, or thrown over to lighten the vessels in rough weather, the evil cannot be entirely removed.

Ponds.

Under chapter six hundred and eighty-seven of the laws of 1867, about seven thousand dollars ($7,000) have been expended by the Board of Sewer Commissioners, in draining many of the stagnant ponds situated in different parts of the city. These ponds, formed by the grading and paving of streets without regard to the surface drainage of the low lots fronting them, are even in thinly-populated districts, centres for the dissemination malarial diseases; but, when existing in the built-up portions of the city, and receiving garbage, dead animals, and filth of all kinds, their pestilential influence can scarcely be estimated.

The following statement shows, by wards, the number of ponds reported as detrimental to health under provisions of the law above mentioned.

Eighth Ward	31
Ninth Ward	1
Tenth Ward	11
Twelfth Ward	25
Fifteenth Ward	11
Seventeenth Ward	1
Total	80

Swine.

During the autumn of 1866, it was deemed advisable, for sanitary reasons, to banish all swine from the built-up portions of the city. To do this without oppressing the poorer classes, many of whom depended upon the raising of pigs as a means of livelihood, seemed difficult, if not impossible. Still, with the possibilty of another epidemic of cholera before us, justice to the majority demanded the removal of every preventable cause of disease, and, accordingly, upon the fourth day of February, the raid against the piggeries was commenced. The proprietors were reported as violating sanitary ordinances, and ten days of preliminary notice of prosecution was given in all cases. This time was frequently extended, to enable the poor owners to fatten their stock for market, but occasionally the hogs were removed within the specified time, and boarded with farmers outside the city limits until they were fit for food. The result of these measures is one hundred and eighty-two (182) piggeries abolished within the year, and this, it is believed, without causing any great distress. At present no swine are openly kept within the built-up portions of the city. Many may be, and doubtless are, kept in cellars and out-of-the-way places, but, whenever discovered, they are promptly removed. The influence of the removal of these animals upon the health of communities can hardly be over-estimated, more especially when many are kept in a neighborhood, and where the drainage of the filthy styes is received into stagnant ponds, as was the case in certain parts of the Twelfth Ward.

SCHOOL BUILDINGS.

Much suffering has been occasioned among teachers and pupils in the overcrowded primary departments of our public schools. Special effort has been made by the Board of Education during the year, to lessen the evil. Rooms the most overcrowded have been closed; additional buildings hired, and now, with the sum of four hundred and fifty thousand dollars ($450,000) placed at the disposal of the Board by an act of the last Legislature, for the erection of school buildings, permanent relief, it is believed, will be obtained.

Vaccination.—By a resolution of the Board of Education, no pupil can be admitted into the public schools, without giving evidence of successful vaccination. This rule, I am assured, is rigidly enforced. The larger incorporated institutions of learning have been visited by Inspectors, who have received from the authorities assurances of willing coöperation in enforcing any rules that will secure protection against contagion.

SLAUGHTER-HOUSES.

The business of slaughtering animals for food during the past year has been the subject of special legislation by the Board of Health. Under the new Code of Sanitary Ordinances, such business has not been permitted in Brooklyn since June 15, 1867, except by a written permit from the Board. This permit was to be based upon the recommendation of a medical officer, after a personal examination of the premises so to be used. Favorable reports were made upon thirteen slaughter-houses, upon the condition that the proprietors should comply with certain regulations, of which the following are among the most important:

1. Sewer connection whenever possible.
2. Perfect cleanliness.
3. The daily removal of blood and offal.
4. Heavy floors, tightly caulked.
5. Seclusion from view of persons passing in street and from the windows of neighboring houses.

Permits for these establishments were approved by the Board on the 8th of August last. As at present conducted, the places cannot be considered as detrimental either to the public health or morals.

The foregoing statements embody but a small portion of the work accomplished through the influence of the Board of Health in this city. The efforts of the Board have drawn unusual attention to sanitary matters, and the better classes of owners have been stimulated to improve their property. The large number of sewer connections made, the number of yards graded, cellars filled, lots cleaned and fenced, and tenement houses improved, independently of any complaints, show that the objects sought by the Board commend themselves to the good judgment of our citizens. It requires but a continuation of our efforts to secure for this city a large measure of the benefit that results from obedience to sanitary laws.

Respectfully submitted,
J. T. CONKLING,
Assistant Sanitary Superintendent,
Metropolitan Board of Health.

"B."

REPORT

OF THE

REGISTRAR OF VITAL STATISTICS.

METROPOLITAN BOARD OF HEALTH,
BUREAU OF VITAL STATISTICS,
November 15, 1867.

To the Secretary of the Metropolitan Board of Health:

The first general report from the Bureau of Vital Statistics, by order of the Board of Health, presented the results of such registration and studies as we had made previous to October 1, 1866. It now becomes our duty to submit a report upon the next succeeding twelve months' records, ending the last week in September, 1867. But, in order to bring all the statistics of this Bureau, up to the close of the present calendar year, the records of the three months that end on the 31st of December will be presented to the Board immediately upon the close of that quarter of the year. Thus we shall have completed the record of the first twenty-two months of this department of the sanitary administration under the Metropolitan Board of Health, and shall have finished the statistical abstracts of two entire years.

Henceforth the annual abstracts, and the Bureau's report thereon, will need to be based upon the experience of each successive calendar year. Fortunately, for every practical purpose, the present year, the sanitary experience and the vital statistics of the twelve months ending in September, will be found to differ from the records of the year that ended in December, only as regards a certain diminished pressure of fever-infections and filth-diseases in the fourth quarter of 1867, over the corresponding quarter of the previous year, thereby diminishing the deaths from zymotic maladies; while in the records of births and marriages we shall have occasion to notice a considerable numerical increment, resulting from the constantly increasing public and personal interest in the official registration of the two chief waymarks to be noted in a human life before its final one is reached.

The plan of our second annual report is essentially the same as that adopted the previous year, viz:

1. A general summary of deaths, births, marriages, and population.
2. Summary statements of the vital statistics of each successive quarter, or season of three months, with explanations and remarks.
3. The consolidated abstracts (*a*) of marriage; (*b*) of births and still-births; (*c*) of deaths; (*d*) meteorological observations; (*e*) zymotic diseases and other preventable causes of death; (*f*) vital statistics of hospitals and public institutions.
4. Review;—Conclusions, and Appended Statements.

The General Summary.

Death is the only fact in the vital records of the population of New York and Brooklyn that is publicly registered with unexceptional completeness. No dead person can be interred, and no remains of the dead are allowed to be removed from the city, without official permission granted by the Bureau of Vital Statistics, under the forms of registration authorized by the Board of Health. The public registers, the burial-permit records, and the official certificates of death, separately and unitedly, show that twenty-three thousand four hundred and forty-three persons died in the city and county of New York during the twelve months that ended in the last week of September. In like manner it is shown that during the same period eight thousand five hundred and eighty-nine persons died in Brooklyn.

Births and birth-rates may prove the correctness or the fallacy of certain opinions regarding the vitality, physical prosperity, social morality, and the laws of population that characterize a city or a nation, but the birth of an infant is seldom so studied, and never so recorded, as to teach the laws of life as effectually as those laws are illustrated in the study and results of fatal diseases. But no civilized people can be justified in neglecting to give to all classes the benefits of such a public registration of the birth of children as will secure the rights and privileges which, by law and by the customs of society, are conceded to the acknowledged offspring of parents, whatever their rank in life. The social and politico-economical considerations that require the registration of the birth of every child should ensure absolute completeness in such records. The sanitary and physiological value of this branch of vital statistics would, by such completeness, be greatly enhanced. But in no American city or town has actual completeness been achieved in birth registration, except in a few instances in which house-to-house inquiry and registry have been enforced.

The law of normal population-increase by a given birth-ratio is so well established in the decennial national census, by the statistical results of imperial inquiry in the states and cities of Europe, as well as by the carefully-maintained birth-records in Boston, Providence, and a few other American towns, that we can approximately state what is the probable number of children born in New York and Brooklyn every year. But the laws of our State still fail to provide any system of espionage or inquiry that can *enforce* the much-desired rule of completeness in this branch of vital registration. Hence this registry is defective.

The total number of births registered in the city of New York in the year that ended in September last, is 12,569. The total of such registry in Brooklyn reached the number of 4,878. This, we have reason to believe—in accordance with the law of normal increase of a population like ours—is not quite half the number of births which must have occurred in the period here mentioned. But the fact must here be stated that the births which are reported to and recorded in this Bureau, are very perfect and valuable records, fully adequate to the protection of all those legal and social interests that can be secured by birth-registry. As in the registration of death and its causes, so in the certificate and registration of a birth, the scope and definiteness of these records are now as complete as they can well be rendered. The perfect certificates which all intelligent physicians now return to this Bureau concerning births and parentage, and the dead, and the circumstances and causes of death, prove that such records can readily be rendered available for exact studies in vital statistics, or for accurate comparison with all similar records in other countries.

With thankful acknowledgments, we state the fact, that the physicians in the two cities, almost without exception, make out their certificates of deaths and of births in a very complete and careful manner, and that, consequently, the public registers have become vastly more valuable than they were during the first months of the present sanitary administration, or at any previous period.

The registration of marriages in the city of New York is believed to be complete, except as regards returns by a class of men who continue to solemnize the marriage ceremony without heeding the inseparable moral and legal obligations which they, as well as the persons they declare to be joined in wedlock, incur toward society, the State, and themselves. With much gratification, we here state the fact that no religious sect declines to render obedience to laws concerning marriage records. The most prominent, laborious, and widely-esteemed clergymen of each denomination, are prompt and exact in making their official returns of the marriages they solemnize.

The total number of marriages certified and registered in the year, was 7,513, or 15,026 persons, in New York, and 1,349 marriages, or 2,698 persons, in Brooklyn. By how great numbers these records fall short of the actual total of marriages which should have been entered upon the marriage registers cannot be accurately stated, but there is good reason for believing that the marriage-rate, *i. e.*, the number of persons who marry in one year, in a thousand resident inhabitants, in the city of New York, is about eighteen, and that in Brooklyn it may be estimated at about nineteen in the thousand. If the State census of 1865, in New York city, is taken as the basis of estimation, the fact will plainly appear that the marriage-rate in this city the past twelve months exceeded twenty persons to the thousand inhabitants, allowing that our registration is, as we believe it is not, absolutely complete. In like manner it would appear, upon the same basis, that Brooklyn married off its inhabitants at the rate of 9.11 to the thousand, if the marriage registration is actually complete in that city. This ratio of marriages is less than half that which is shown by the marriage registers of New York, and the difference or defect is mainly owing to the neglect of a single sect that has hitherto failed to make any returns of the vast number of marriages that are solemnized by its clergymen. London, with its absolutely perfect registration of marriages, has a marriage-rate of from seventeen to nineteen and a half to the thousand inhabitants; the thirteen chief cities of Great Britain have an average marriage-rate of seventeen to a thousand; the city of Providence had, in the year 1866, no less than twenty-nine of its population married in every thousand, during that year—a marriage rate that is almost unprecedented; Boston has an average rate of about twenty-six persons married in a thousand each year, and the average annual marriage rate in the State of Massachusetts, is nineteen persons in a thousand. That the annual marriage-rate in New York is fully equal to that of London and the thirteen chief cities of Great Britain cannot be doubted; and that the ratio of marriages in the Brooklyn population is greater than in New York is certain, for that is a city of families and homes, with a very large proportion of young people at marriageable ages. The further consideration of this subject and various other questions relating to the basis and means of completeness in vital statistics, will be resumed in a subsequent section of this report. We thus preface our statistical abstracts for the purpose of aiding in the practical analysis of these records, and in the hope, also, of preventing the reader from mistaking the true import of any portion of the statistics which are presented upon succeeding pages.

CONDENSED SUMMARY OF THE RECORDS.

In the subjoined table is presented an epitome of the statistics that are presently to be considered in greater detail:

Table showing the number of marriages, births and deaths, in the city and county of New York, from September 30, 1866, *to September* 28, 1867.

Persons married.	Totals.	Births.	Totals.	Deaths.	Totals.
Total number of persons married	15,026	Total births (registered)	12,569	Total deaths	23,443
Native males	1,974	Males	6,397	Males	12,460
Native females	2,341	Females	6,164	Females	10,983
Foreign males	5,346	Sex not stated	8	Adults	9,500
Foreign females	4,978	Both parties (foreign)	8,047	Children under 20 years.	13,943
Nativity not stated (males).	193	Both parties (native)	2,291	Total children under 5 years	12,312
Nativity not stated (females)	194	Foreign (mother only)	567	Total children under 5 years of foreign parents	6,030
Husbands non-resident in city.	1,318	Foreign (father only)	1,050	Natives of the United States	15,886
Brides non-resident in city	820	Nativity of parents not stated	554	Foreign	7,557
First marriage of male	5,698				
First marriage of female	5,717				

The foregoing general results relate to the entire population of New York, with the county and State institutions that are within the limits of this city, and, as before mentioned, only the death-ratio can be stated with absolute accuracy.

Population and the Census.

The census which was taken under State authority in the summer of 1865, is the basis of the subjoined summary:

Abstract exhibiting the numbers and distribution of the population of the city and county of New York; also, in city of Brooklyn, and in the five counties of New York, Kings, Queens, Richmond and Westchester.

[*State Census of* 1865.]

CITIES AND COUNTIES.	Total population.	MALES.		FEMALES.	
		White.	Colored.	White.	Colored.
City and county of New York........	726,386	340,036	4,129	376,407	5,814
City of Brooklyn....................	296,378	139,416	1,773	152,773	2,416
Kings county (including Brooklyn) .	311,090	146,364	2,113	159,865	2,748
Westchester county	101,197	48,533	1,000	50,633	1,031
Richmond county	28,209	13,249	292	14,317	351
Queens county	57,997	23,793	1,538	28,017	1,649
Total in cities and towns of Metropolitan district..............	1,224,879	574,975	9,072	629,239	11,593

CITIES AND COUNTIES.	CIVIL CONDITION.				BORN IN		Unknown.
	Single. Never married.	Married.	Widowers.	Widows.	United States.	Foreign countries.	
City and county of New York,	423,121	262,727	7,884	32,654	407,312	313,477	5,597
City of Brooklyn	172,452	109,036	2,986	11,904	187,589	107,851	938
Kings co. (includ'g Brooklyn)	181,116	114,472	3,135	12,367	197,243	112,869	978
Westchester county....	59,703	36,683	1,200	3,611	74,315	26,394	488
Richmond county............	16,851	9,954	303	1,101	18,973	9,142	94
Queens county	33,747	21,574	738	1,938	43,224	14,143	630
Total in cities and towns of Metropolitan district	714,538	445,410	13,260	51,671	741,067	476,025	7,787

In every estimate of a "birth-rate," a "death-rate," or a "marriage-rate," and in various applications of vital statistics, the absolute correctness of the census of the populations to which such records relate is an indispensable element of knowledge. And, while we may use the foregoing summary of the classified distribution of the population given by the last census in the city of New York, it is now known that the actual population of this city is very nearly one million. A recent census of an entire ward by the Metropolitan Police (this, too, being the most typical ward for exhibiting the actual present condition of the population), and the special census of several densely-populated blocks, and of one of the tenant-house wards, by the Council of Hygiene, have shown how great were the defects of the census by the State in 1865. These facts need to be stated in this place, because, on almost every subsequent page of this report, we shall, from necessity, use that census as the basis of ratios and comparisons. And, with this prefatory remark, we may be guarded against erroneous deductions and false conclusions. The ratio by which the total population in New York has increased since the termination of the late war is reasonably believed to be about 7 per cent in each year, and this increase has been mainly in wards numerically named above the Seventh; while in Brooklyn the rate of increase seems to be equal to, and even greater than that of New York; this is in the wards numerically named above the Fourth. These facts being understood, the reader of the following pages will find all the deductions derived from ratios and comparisons more conclusive and instructive than they otherwise would appear to be. In the great capitals of Europe, the actual number, distribution, and ratio of increase of their populations are stated with accuracy; but in this metropolis the population is so rapidly augmented and variously affected in its distribution, under special influences from immigration and the enormous demands of commerce, that a decennial census, though accurate, would fail to give us all the means required for estimating with exactness the laws of increase, distribution, and local fluctuations, in our population, year by year.*

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* It is vain to expect even a tolerable degree of accuracy in either the National or the State census until a thorough reform has been effected, both in the methods and the *personnel* of the work. The State employed its census-takers almost upon considerations that had no regard to accuracy and completeness of results, and paid the men by the day or for a long period. The National census, on the other hand, incurred the greatest possible liability to false and excessive returns, by paying the canvassers or takers a certain sum for each name they put upon their official returns. We know that the Superintendent of the State census was compelled to accept incomplete and faulty returns, and he had no means for correcting or supplying defects in the census of 1865.

An absolutely correct census is a matter that concerns the public so importantly, especially in these great cities, that not to call attention to these facts would be a disregard of duty. A vast variety of questions in public economy, commerce, and government alike, require the same accuracy and completeness that the vital statistician requires in the census records of population. And that it is practicable to make an accurate census is plain enough, for in England the census is accurately taken by a trained police in a single day; and, a few weeks ago, an absolutely accurate census of the cities of Washington and Georgetown, and the entire District of Columbia, was taken in three days, under the

The subjoined table exhibits the leading facts concerning the ratios of increase and fluctuation of the population in this city and its several wards, as shown by the successive census returns from 1790 to 1865:

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skilful superintendence of Dr. F. B. Hough, late Superintendent of the New York Census. The perfect results in the Washington census abundantly certify the superiority of the police or immediate method of census-taking. A census that was taken in the month of May, 1867, for special purposes in the Seventeenth Ward of New York, under the superintendence of Captain Bowen G. Lord, of the Metropolitan Police, and exclusively by police officers, has given results which go far toward demonstrating that the total population in New York is not much less than a million. Captain Lord found 95,091 residing in that ward. The State census, in 1865, returned only 79,563 as the total population of that ward, and it found only 12,122 children under five years of age. This official return differed from Captain Lord's, by being 15,528 less in the total population return, and 1,890 less children under five. It is plain that the last State census did not make an official return of the full number of the adult population in this city.

*Table exhibiting the increase of Population in New York.**

WARDS.	Date of format'n of the ward.	1790	1800	1810	1814	1820	1825	1830	1835	1840	1845	1850	1855	1860	1865
First	....	....	4,320	7,941	7,630	12,085	9,929	11,331	10,380	10,629	12,230	19,754	13,486	17,373	9,852
Second	....	....	5,167	8,493	7,439	8,214	9,315	8,203	7,549	6,394	6,962	6,665	3,249	2,507	1,194
Third	....	....	6,449	7,426	7,495	9,201	10,801	9,599	10,884	11,581	11,900	10,355	7,909	3,757	3,367
Fourth	....	....	6,935	10,226	9,856	10,736	12,240	12,705	11,439	15,770	21,000	23,250	22,895	21,994	17,352
Fifth	....	....	9,148	14,744	14,523	12,421	15,093	17,722	18,495	19,159	20,362	22,686	21,617	22,337	18,205
Sixth	....	....	13,076	11,286	11,821	13,309	20,061	13,570	14,827	17,198	19,343	24,698	25,562	26,696	19,754
Seventh	1791	....	15,394	12,120	10,886	13,006	14,091	15,873	21,481	22,982	25,556	32,690	34,422	39,982	36,962
Eighth	1803	....	....	9,128	10,702	13,766	24,285	20,729	28,570	29,073	30,900	34,612	34,052	39,406	30,098
Ninth	1803	....	....	4,719	4,343	11,162	10,956	17,333	20,618	24,795	30,907	40,657	39,982	44,385	38,504
Tenth	1808	....	....	10,890	10,824	17,806	23,932	16,438	20,929	29,026	20,993	23,316	26,378	29,004	31,537
Eleventh	1825	....	....	....	....	....	7,344	14,918	26,845	17,053	27,259	43,758	52,979	59,571	58,953
Twelfth	1827	....	....	....	....	....	7,938	11,808	24,437	11,652	13,378	10,451	17,656	27,958	28,259
Thirteenth	1827	....	......	....	....	....	....	12,598	17,130	18,517	22,411	28,246	26,597	32,917	26,388
Fourteenth	1827	....	....	....	....	....	....	14,288	17,306	20,235	21,103	25,196	24,754	28,080	23,382
Fifteenth	1832	....	....	....	....	....	....	....	13,202	17,755	19,422	22,564	24,046	27,587	25,572
Sixteenth	1836	....	....	....	....	....	....	....	....	22,723	40,350	52,882	39,823	45,176	41,972
Seventeenth	1837	....	....	....	....	....	....	....	....	18,619	27,147	43,766	59,548	72,953	79,563
Eighteenth	1846	....	....	....	....	....	....	....	....	....	....	31,546	39,415	57,462	47,613
Nineteenth	1850	....	....	....	....	....	....	....	....	....	....	18,465	17,866	28,252	39,945
Twentieth	1851	....	....	....	....	....	....	....	....	....	....	....	47,055	67,519	61,884
Twenty-first	1853	....	....	....	....	....	....	....	....	....	....	....	27,914	49,017	38,669
Twenty-second	1853	....	....	....	....	....	....	....	....	....	....	....	22,605	61,725	47,361
Total	....	33,131	60,489	96,373	95,515	123,706	166,086	197,112	268,089	312,710	371,223	515,547	629,810	805,358	726,386

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* In this table the reader can discover the statistical results of some great fluctuations which have taken place in the population of those wards in which the necessities of commerce and its warehouses have supplanted large masses of inhabitants. For example, it is seen that in the first six wards, which comprise the whole region south of Canal street, these fluctuations began to be felt as early as 1845, and the effect became more and more marked in each succeeding census period since that time. In all the wards south of Fourteenth street the encroachments of warehouses and manufactories have produced many changes in the state of the population, but the most important of all is that of concentration.

Percentage of Increase and Decrease of Population in the several Wards of New York city between each Census Period since 1790 (*shown in Percentages upon Total Population*).

WARDS.	1800.	1810.	1814.	1820.	1825.	1830.	1835.	1840.	1845.	1850.	1855.	1860.
First	.....	+84	+ 4	+58	—18	+14	- 8	+ 2	+15	+61	-32	+35
Second	.....	+62	-12	+10	+13	-12	- 8	-15	+ 9	- 4	-51	-20
Third	.....	+15	+ 1	+23	+17	-11	+14	+ 6	+ 3	-13	-33	-57
Fourth	.....	+47	- 3	+ 9	+14	+ 4	- 9	+38	+33	+11	- 1	- 4
Fifth	.....	+61	- 2	-14	+22	+17	+ 8	+ 4	+ 6	+11	- 5	+ 3
Sixth	.....	+14	+ 5	+13	+51	-32	+ 9	+16	+12	+28	+ 4	+ 4
Seventh	.....	+31	-10	+19	+ 9	+12	+35	+ 7	+11	+28	+ 5	+16
Eighth	.....	.....	+17	+28	+76	-15	+37	+ 2	+ 3	+12	- 1	+15
Ninth	.....	.....	- 8	+128	- 2	+58	+19	20	+25	+31	- 1	+11
Tenth	.....	.....	+ 5	+65	+34	-31	+27	39	-38	+11	+13	+10
Eleventh	.....	.....	.....	.....	.....	.....	.....	.....	.....	+6	+21	+13
Twelfth	.....	.....	.....	.....	.....	.....	.....	.....	.....	-22	+68	+74
Thirteenth	.....	.....	.....	.....	.....	.....	.....	.....	.....	+26	- 6	+24
Fourteenth	.....	.....	.....	.....	.....	.....	.....	.....	.....	+19	+ 2	+13
Fifteenth	.....	.....	.....	.....	.....	.....	.....	.....	.....	+16	+ 7	+14
Sixteenth	.....	.....	.....	.....	.....	.....	.....	.....	.....	+31	-25	+13
Seventeenth	.....	.....	.....	.....	.....	.....	.....	.....	.....	+61	+36	+23
Eighteenth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	+25	+15
Nineteenth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	+84
Twentieth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	+44
Twenty-first	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	+76
Twenty-second	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	+173
Total increase in each decennial period...	+83	+59	- 1	+30	+ 34	+19	36	+ 17	+16	+ 39	+20	+29
Mean annual increase between periods...	+8.8	+5.9	-0.2	+5.0	+6.8	+3.8	7.2	+3.4	3.2	+7.8	+4.0	+5.8

The elements of this tabular exhibit were kindly furnished to us by Dr. Franklin B. Hough, the accomplished statist, who was Statistical Superintendent of the last census, and who has revised the table here given. The following remark by him concerning it and the increase and distribution of Metropolitan population, may well conclude all that needs to be said upon the subject in this report:

The apparent decrease of population in some wards is due, in most instances, to subdivision in the formation of new ones; still it is apparent that the population of the lower portion of the island (city) is steadily decreasing, as the demands of commerce crowd upon the area formerly occupied by families.

"The island of Manhattan, the west end of Long Island, the lower part of Westchester county, the neighboring shores of New Jersey, and the northern half of Staten Island, are destined to receive an aggregate population greater than that of any metropolis now existing, or that shall then be existing in the world.

"While we can foresee nothing that will have a tendency to check the general growth of New York and its dependencies as a whole, there are doubtless many things still unknown, which will tend greatly to accelerate its growth in population and wealth."

"This question," adds Dr. Hough, who is eminently versed in sanitary knowledge and vital statistics, "in view of its vast importance, and its sanitary relations and necessities, demands the earnest and thoughtful consideration of every citizen who has a family to be exposed to disease derived from neglect of public hygiene, or property to be enhanced or reduced in value by the security or abuse of sanitary laws."

SUMMARY OF THE QUARTERLY STATISTICS.

State of the Public Health during Three Months, ending December 31, 1866.—In the third quarter of the year 1866—the three months ending September 30th—the total number of deaths in New York city and county was 9,787. It was the epidemic season of that eventful year. But the succeeding three months were more favorable to life, for in that period there were only 5,609 deaths. Cholera had nearly disappeared at the close of September, though in that month there had been 250 fatal cases of the epidemic. Only 64 deaths by that cause occurred in the succeeding three months now under consideration.

Of the total number (5,609) of deaths, there were 1,421 caused by the zymotic diseases. This was 30.88 per cent. of the mortality from all causes. Infancy lost heavily during the entire quarter, 1,511 of the dead, or 26.94 per cent., being less than one year of age; and 2,526, or more than 45 per cent., being under five years. This was but little below the death-rate for those ages in the entire year of 1866. Like the continued high, though greatly diminished, ratio of mortality by the zymotic causes, this great mortality in the first years of childhood indicated the presence of special agencies of insalubrity. The subjoined abstracts exhibit a condensed statement of the mortality that occurred in the last quarter of 1866.

Abstract of Deaths Registered in the City of New York in the Quarter ending December 31, 1866, Sexes, Nativities, Ages and Percentages at each Period.

MONTH.	Males.	Females.	Total.	United States.	Foreign.	Not stated.
October	1,015	933	1,948	1,159	766	23
November	874	795	1,669	1,020	644	5
December	1,034	958	1,992	1,157	793	42
Total	2,923	2,686	5,609	3,336	2,203	68

MONTH.	Under 1 year of age.		1-2.		2-3.		3-4.		4-5.		5-10.		10-15.		.15-20.		20-25.		25-30.		30-35.		35-40.		40-45.	
	M.	F	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
October	283	270	115	95	41	27	17	19	11	10	35	30	25	18	18	28	63	54	54	48	57	58	41	51	57	53
November	243	204	63	64	39	39	26	27	13	17	40	30	9	7	26	20	43	45	38	47	49	40	53	41	42	39
December	264	247	99	70	59	47	34	20	26	27	47	40	12	14	18	25	41	48	53	62	54	55	67	62	54	32
Total	790	721	277	229	139	113	87	66	50	54	122	100	46	39	62	73	147	147	145	157	160	153	161	154	153	124
	*14.08	12.86	4.94	4.08	2.48	2.01	1.55	1.18	.89	.96	2.18	1.78	.82	69	1.11	1.30	2.62	2.62	2.58	2.80	2.85	2.73	2.87	2.74	2.73	2.21
Total †	1,511		506		252		153		104		222		85		135		294		302		313		315		277	
Per cent ‡	26.94		9.02		4.49		2.73		1.85		3.96		1.51		2.41		5.24		5.38		5.58		5.61		4.94	

MONTH.	45-50.		50-55.		55-60.		60-65.		65-70.		70-75.		75-80.		80-85.		85-90.		90-95.		95-100.		100 and upward.		Total by sexes.		Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
October	38	28	44	33	31	22	38	18	22	21	13	20	5	12	4	13	3	3	....	....	....	2	....	....	1,015	933	1,948
November	36	21	40	30	24	21	19	21	23	22	16	11	6	22	11	16	4	6	...	1	1	3	...	1	874	795	1,669
December	43	26	41	35	36	30	31	24	17	24	21	32	7	17	8	9	2	6	....	3	....	3	....	....	1,034	958	1,992
Total	117	75	125	98	91	73	88	63	62	67	50	63	18	51	23	38	9	15	....	4	1	8	....	1	2,923	2,686	5,609
	*2.08	1.32	2.23	1.75	1.30	1.62	1.57	1.12	1.11	1.19	.89	1.12	.32	.91	.41	.68	.16	.27	....	.07	.02	.14	....	.02	51.79	48.17	
Total †	192		223		164		151		129		113		69		61		24		4		9		1				
Per cent ‡	3.40		3.98		2.92		2.69		2.30		2.01		1.23		1.09		.43		.07		.16		.02				

* Percentage of Deaths in each period of Life on the total mortality of the Quarter. † Total of both Sexes. ‡ Percentage of both Sexes on total mortality of the Quarter.

DEATHS FROM ZYMOTIC DISEASES.

NEW YORK.—DEATHS FROM SMALL-POX, MEASLES, SCARLATINA, DIPHTHERIA, WHOOPING-COUGH, TYPHOID FEVER, TYPHUS FEVER, CHOLERA, CHOLERA INFANTUM, DIARRHŒAL MALADIES, AND OTHER ZYMOTIC DISEASES.

Registered during the quarter ending Dec. 31, 1866.

WARDS.	Small-pox.	Measles.	Scarlatina.	Diphtheria.	Croup.	Whooping-cough.	Typhus Fever.	Typhoid Fever.	Cholera.	Cholera Infantum.	Cholera Morbus, and other Diarrhœal Diseases.	Other Zymotic Diseases.	Total deaths from Zymotic Diseases.	Deaths by Accident or Negligence (*Coroners' Inquests.*)	Total deaths from all Causes.	Total Population, (in Wards), Census of 1865.	Percentage of Zymotic Deaths on Total Mortality.	Death-Rate per 1,000 Annually of the Population from Zymotic Causes.	Death-Rate per 1,000 Annually of the Population from all Causes (not including Deaths in Hospitals.)
First	....	....	1	3	3	1	1	4	7	7	5	6	38	8	127	9,852	29.92	15.43	51.16 *a*
Second	....	....	....	....	....	....	....	....	....	....	...	....	......	....	4	1,194	....	....	13.40
Third	....	....	....	....	1	....	....	1	....	....	....	....	2	4	22	3,367	9.09	2.37	26.14
Fourth	....	....	4	1	2	1	....	3	2	1	8	3	25	5	158	17,352	15.82	5.76	26.42
Fifth	....	....	3	1	3	1	1	3	4	5	7	12	40	14	157	18,205	25.48	8.79	34.50 *b*
Sixth	....	....	22	1	4	....	1	7	21	9	3	12	80	5	240	19,754	33.33	16.20	48.60 *c*
Seventh	....	1	11	8	13	1	2	6	1	5	7	11	66	18	246	36,962	26.83	7.14	26.62
Eighth	....	....	5	7	7	....	1	3	3	3	5	8	42	10	221	30,098	19.00	5.58	29.37
Ninth	....	....	14	4	6	4	3	8	1	5	6	10	61	7	258	38,504	23.64	6.33	26.80 *d*
Tenth	....	....	14	4	5	1	1	4	....	2	9	6	46	7	209	31,537	22.01	5.83	26.50
Eleventh	....	1	24	15	9	2	3	5	....	5	13	12	89	10	364	58,953	24.45	6.04	24.70 *e*
Twelfth	....	....	14	3	3	1	10	32	2	2	30	24	121	10	278	28,259	43.53	17.13	39.35 *f*
Thirteenth	1	....	13	3	3	1	1	5	....	5	8	8	48	5	183	26,388	26.23	7.28	27.74
Fourteenth	....	....	4	3	3	....	2	5	3	3	10	11	44	2	204	23,382	21.57	7.44	34.90 *g*
Fifteenth	....	....	7	2	1	1	2	2	2	....	2	3	22	5	100	25,572	22 00	3.45	15.64
Sixteenth	1	1	7	8	5	1	2	6	3	7	15	13	69	11	259	41,972	26.64	6.57	24.68
Seventeenth	...	1	30	13	17	4	5	15	2	9	20	13	129	16	512	79,563	25.20	6.49	25.74
Eighteenth	....	....	21	6	3	6	3	7	1	7	6	4	64	6	279	47,613	22.94	5.38	23.44

Nineteenth	3	1	7	3	5	2	8	13	1	7	94	44	188	11	674	39,945	27.81	18.83	67.49 *h*
Twentieth	....	....	18	5	5	....	5	14	2	5	18	16	88	15	378	61,884	23.28	5.69	24.43 *i*
Twenty-first	....	....	9	3	3	1	2	6	2	5	19	21	71	46	409	38,669	17.36	7.34	42.30 *k*
Twenty-second	....	1	14	5	8	2	....	13	7	3	27	8	88	10	327	47,361	26.91	7.43	27.62
Totals	5	6	242	98	109	30	53	162	64	95	312	245	1,421	225	5,609	726,386	25.33	7.83	30.88

a Castle Garden, 4; Fort Wood, N. Y. Harbor, 1; Bat'y Bar. Hosp., 7. *b* City Hospital, 47. *c* City Prison, 5. *d* St. Vincent's Hosp., 28. *e* Nursery Hosp., R. I., 2; Ward's Island Emigrant Refuge, 113. *f* Deaf and Dumb Inst., 3; Lunatic Asylum Bloomingdale, 4. *g* Roman Catholic Orphan Asylum, 2. *h* Alms House, 217; Col'd Home Hosp., 29; Col'd Orphan Asylum, 2; Lunatic Asylum, 32; Nursery and Child's Hosp., 32; Old Ladies' Asylum, 2; St. Luke's Hosp., 35; Workhouse 3; Roman Catholic Orphan Asylum, 1; Penitentiary, 1; Small Pox, 3; Charity Hospital, 106—Total on Blackwell's Island, 463. *i* Jews' Hospital (Mt. Sinai), 8. *k* Bellevue Hosp., 211.

It will be observed that in particular localities, especially where cholera had been epidemic in the previous quarter, the death-rate continued far in excess of any normal standard. For example, in the First ward the mortality was at the rate of 51.16 per 1,000 inhabitants, and in the Sixth ward there was a death-rate of 48.60 per 1,000; 36.42 in the 1,000 in the Fourth; and 27.62 in the 1,000 in the Twenty-second ward.* In these wards, and in the Eleventh and Seventeenth, there existed chronic sources of disease in the midst of their crowded tenant houses, so that after cholera had ceased to threaten, it was found that scarlatina and diphtheria destroyed more lives than all the diarrhœal diseases that still continued to be rife in those places.

The amount of mortality in the public institutions on Ward and Blackwell's Islands was unusually great, notwithstanding the entire cessation of epidemic cholera. In the Emigrant Refuge and Hospital, on the island first mentioned, there were one hundred and thirteen deaths; and in the institutions on the latter island, there were four hundred and sixty-three deaths. This excessive mortality, occurring, as it did, in the classes of persons that are most susceptible to any lethal† or epidemic conditions, is a fact which should be noticed. Though the certified causes of the individual deaths were very largely of the constitutional and local classes, the majority of them would justly be epitomized under the general terms low vitality and defective assimilation. Upon those islands, as well as among the lower classes in the two cities, the infant mortality ceased to be certified as caused by *cholera infantum*, but now was attributed to diarrhœa, marasmus, inflammation of bowels, etc. Inquiry proved that a vast proportion of those dying nurslings had lingered in misery and chronic disorder of the bowels since the hot weather of summer. This class of infants, no longer able to assimilate nourishment, and maintain a normal vigor, together with a great number of aged persons that had passed the sixtieth year, dropped into their graves as the inclement changes of the last months of autumn drew on. In December there were eight hundred and ninety-three deaths in childhood, under the fifth year, against seven hundred and forty-five in the milder month of November. While there died of inhabitants, over sixty years of age, five hundred and sixty-one persons during the quarter; and of these, fourteen of the decedents were above ninety years of age, one was over one hundred years old, sixty-one were between eighty and eighty-five years, and twenty-four were between eighty-five and ninety years of age. "Diarrhœa," "old age," and "debility" were the chief causes certified for these deaths in extreme age.

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* These, and all similar uses of the term *death-rate*, are, of course, understood to refer to a *yearly* rate: The rate for the quarter was equivalent to such and such an *annual* death-rate.

† This term, derived form the Greek word *lethare* (to kill), is employed by hygienists to signify a fatal power or tendency. Observation shows that one class of persons may be more susceptible to the *lethal* or fatal tendency of a disease than other classes. For example, a child that is already enfeebled by deficient nourishment, foul air, and wretched life, when it becomes ill with any important disease, has but a small probability of surviving. Such a child will be unable to resist or endure the disease. While a child that is well nourished, well housed, or possessed of a vigorous constitution, may survive any of the ordinary diseases of childhood. In such cases the *lethal* influence would be practically synonymous with the common term "susceptibility;" but in other instances it would refer to the degree of *malignancy* of a malady—as in an epidemic, for example, which may vary in its severity in different seasons or different places.

During the entire quarter the mortality among children, under two years of age, continued to be excessive, and as the cold weather of December drew on, it was observed that many little ones, whose acute diarrhœal sickness had lapsed into inanition and marasmus, quickly dropped into their graves. It was manifest that in the tenant-house population—for this kind of mortality was almost wholly in that class—the depressing cold, or the stifling closeness of their homes, because of the inclement weather, had much to do with this increase of mortality in puny children. And the next greatest cause of child mortality was experienced in the increasing prevalence and fatality of measles, scarlatina, and diphtheria. These three diseases killed fifteen hundred and forty children in New York, and nine hundred and seventy-eight in Brooklyn, during the three months ending December 31, 1866. The total increase of child mortality in the course of November and December, in New York, is thus exhibited :

Deaths of young children in the months of November and December, 1866.

	NOVEMBER.						DECEMBER.								
	First week in November.	Second week in November.	Third week in November.	Fourth week in November.	Total in four weeks, by measles, scarlatina and diphtheria.	Total by all causes.	First week in December.	Second week in December.	Third week in December.	Fourth week in December.	Last week in December.	Total in five weeks, by measles, scarlatina and diphtheria.	Total by all causes.	Total in two months by measles, scarlatina and diphtheria.	Total by all causes.
Deaths in the 1st year of infancy,	121	99	108	110	15	438	116	107	106	87	88	17	504	32	942
Deaths in the 2d year of infancy,	33	35	21	17	5	106	33	32	38	37	31	36	171	41	277
Total deaths of children under 5 years of age,	194	169	169	162	66	694	201	178	188	170	168	143	905	209	1,599

The fluctuation, in the ratio which the total amount of infant mortality bears to the aggregate of deaths by all causes, the weekly variations in the latter aggregate, and the curve of increase and subsidence of the epidemic mortality by measles and scarlatina, are presented at one view upon the mortality chart in a subsequent section of this report. The widespread prevalence of scarlatina, in conjunction with Asiatic cholera, has been observed and variously commented upon in Europe and America during former visitations of the latter pestilence; but the most that such observations hitherto warrant, perhaps, is simply this, that certain local conditions of soil and atmosphere that favor the propagation of cholera, when that infection is planted in a district, may also favor an epidemic prevalence of scarlatina poison. Hitherto, however, no ground of relationship of these two pestilences has been ascertained.

The widespread prevalence of scarlatina and measles, as the cold winter came on, led to a subsequent increase in the number of deaths from pulmonary inflammation and other secondary maladies, that are prone to follow these exanthematous fevers. Diphtheria became unusually prevalent in December, and as not a few physicians certified that this disease was associated with scarlatina as the ultimate cause of death, it would seem that the latter infection finds in diphtheria and its endemic causes, certain physical conditions which favor its own fatal operation. Aside from the fact that scarlatina maligna, affecting the throat destructively, is sometimes mistaken for diphtheria, and malignant cases of the latter disease mistaken for the former, the fact is observed that, to a great extent, these two domestic pestilences prevail in the same seasons and the same or similar places. This fact has been much commented upon, and, by referring to the abstract of mortality by wards, on page 51, it will be observed that out of the two hundred and forty-two deaths by scarlatina, and ninety-eight by diphtheria, twenty-four of the former and fifteen of the latter occurred in the Eleventh Ward, on an area of one hundred and ninety-six acres, where the population is packed at the rate of about 200,000 to the square mile. The adjacent (Seventeenth) ward had thirty deaths by scarlatina and thirteen by diphtheria during the three months, and it was in the most crowded blocks that these diseases chiefly prevailed.

Diarrhœal diseases and cholera destroyed four hundred and seventy-one lives in New York during the quarter, and one hundred and forty-three in Brooklyn, but only sixty-four deaths in New York, and seven in Brooklyn were attributed to the latter cause. The course of these and the other chief causes of death is best understood from the yearly chart of mortality, on a subsequent page. Cholera lingered and made occasional outbreaks in three very characteristic spots, where the undrained and filth-sodden grounds about a miserable class of tenements gave the requisite soil for perpetuating the germs of pestilence. One of these foul spots is situated between Sixty-third and Seventieth streets, just west of Eighth avenue and the Central Park—a "shanty village" of *chiffonniers;* another, is that undrained basin near tide-level, on Fourth avenue, near One Hundred and Sixteenth street, and the third hot-bed that nourished the last germs of the epidemic, is on the eastern margin of the "Five Points," where its ravages commenced at the beginning of summer. Some very bad diarrhœal districts in the city continued uninfected by cholera.

The mean temperature of October was 57° Fahr.; of November, 48°; and of December, 35°. Heavy rains began to fall the last of October, and during the last ten weeks of the quarter the rainfall amounted to nearly nine inches depth. The last three weeks of December were unusually cold, and had a mean temperature that was four degrees below freezing-point. Penury and bad-housing induced some increase in the number of deaths from congestive and other lung diseases. From the notes then made in our weekly summaries, the following may be repeated here: "In a single week we find twenty-six persons have died in the tenant-houses of the Fourth Ward, and that of these, there were thirteen by the lung-diseases alone. In the unventilated tenements of that ward, and in all other poor neighborhoods, the ignorant people are led, by poverty and cold, to shut themselves up closely in the foul and irritating atmosphere of their unhealthy dwellings. The poor are killed by their poverty, and much more by their ignorance. Hence, it is desirable that all deeds of charity, among the needy or the sick, should be accompanied by plain instructions in domestic and personal hygiene, especially in matters of cleanliness and ventilation."

The destruction of lives by fire, in tenant-houses and workshops, was so great as to attract unusual attention in December, and in the third week of that month our usual summary recorded the fact, that "the Coroners of New York returned verdicts upon forty-one cases of violent or sudden deaths, eleven of which were by burning. In two weeks this bureau received the Coroners' returns upon twenty-five deaths from this one cause." Notwithstanding such murderous consequences of culpable neglect in the construction of lofty buildings, and in the management of combustibles therein, no adequate power could be applied to remedy this fearful evil until the Tenement and Lodging House Act was passed by the Legislature in the following May.

The severe cold in the last three weeks of December drove to the public and private almoners of charity an unusual number of applicants for aid in food and fuel, and under the pressure of penury and an unexampled degree of overcrowding, the poorest classes in both cities were sadly defenceless against the diseases which menace the tenant-house population in winter. It was found that nearly as many poor children died from results of neglect after measles and scarlatina as were directly killed by the diseases themselves.

Typhoid fever became quite prevalent in certain quarters of both cities, and in New York destroyed 162 lives, and in Brooklyn 75; but this *enteric* fever was not diffused over all the diarrhœal fields, though only a few fatal cases occurred beyond the limits of those fields. The Seventeenth, Twentieth and Twenty-second

Wards, in New York, and portions of the Ninth, Eleventh, Sixteenth and Twentieth Wards, in Brooklyn, furnished the chief centres for this fever. Whether defective house-drainage and offensive privies, or the partially drained and damp condition of the regions of the fever, had most or anything to do with the cause of this disease, is a practical question which would probably admit of an answer. Certain it is that these local faults seem to have been the only constant conditions.

Typhus fever, of the true contagious type, destroyed fifty-three lives in New York and only nine in Brooklyn. Certain overcrowed tenements had nurtured the contagion, and from one of them in the Seventeenth Ward it was conveyed by a wretched visitor to the Catholic Reformatory, a refuge for neglected and vagrant girls, and occupying an old mansion, situated in an open field on Eighty-sixth street, near the East river, at a distance of more than four miles from the point of diffusion just mentioned. The practical value of a fever-hospital and of a country farm, for the immediate dispersion and sanitary benefit of the inmates of the crowded city reformatory refuge, was convincingly illustrated in this instance; for the sick were immediately sent to the typhus pavilions on Blackwell's island, and the other inmates were sent to the farm of the Reformatory at West Farms, Westchester county. It was a lesson in hygiene applied to one of the most troublesome, yet controllable, of infectious poisons.

State of the Public Health in the Three Months ending March 31st, 1867.—In the winter quarter of the present year the death-rate was diminished by the decrease of diarrhœal and other disorders of the bowels. The total mortality amounted to 5,197 in New York, and 1,862 in Brooklyn. Zymotic diseases caused 1,067, or 28.62 per cent. of the deaths in New York, against 1,421, or 30.88 per cent. of the mortality in the previous quarter. Unusually cold as the winter was, it would have been unusually healthful had not measles and scarlatina been epidemic. These two pests of childhood killed 317 persons in New York, and 134 in Brooklyn.

Typhus and typhoid fevers, which, toward the end of autumn, had gained a lodgement in several public institutions, were under control in the places where they were most feared, but occasionally the typhus infection burst forth with fatal activity in overcrowded dwellings. In one instance, a destitute widow and child left one of the typhus cellars, and entered a well managed, but crowded, charitable institutions—the Girls' Lodging-house, on Canal street—and carried the typhus contagion, either in their persons or their scanty clothing, so that, in a few days, thirty of the women and girls, in addition to the mother and child that brought the fever-poison into the house, were seized by the fever. Immediate dispersion and sanitary care of the inmates, and the removal of the sick, as in the several instances that occurred in the previous months, arrested the progress of the local epidemic. The two forms of continued fever—typhus and typhoid—killed 136 persons in New York, and 43 in Brooklyn, during the quarter. In the preceding three months, there were 215 deaths by these fevers in the former city, and 77 in Brooklyn.

The positively preventive effect of the sanitary measures, and especially the disinfection and cleansing, adopted to arrest the progress of the typhus infection, were more marked and decisive than the same procedures against scarlatina, measles and diphtheria. Yet there was abundant reason to conclude that such measures vastly mitigated the fatality, and restrained the diffusion of the latter diseases, for it was estimated that not less than 12,000 children suffered from one or more of these pestilent disorders in the last quarter of 1866, before the regulations for disinfection were adopted, and, after that practice was established, it was observed that the number of deaths by these three causes steadily diminished, even when the condition of the population in the winter and spring most favored the spread and fatality of such diseases. Even if the result had been otherwise, and no obvious benefit had followed the unusual efforts for purification and disinfection, still we should be warranted in believing that the injurious and deadly effects of the contagia that pertain to these maladies would be somewhat mitigated by such purification of apartments and clothing of the sick and the dead. But this sanitary cleansing not only mitigated the severity of the epidemic in certain houses, but it seemed, in several instances, actually to arrest and terminate it, after the first group of victims recovered. Such sanitary regulations might well be applied in the country hamlet, or farm-house, as well as in the crowded city, for however widespread and malignant may be the epidemic or the pandemic causes of these pestilences of childhood, the strictly contagious and infectious properties of such diseases *need to be avoided*, and, as far as possible, *destroyed*.

Abstract of Deaths Registered in the city of New York in the Quarter ending March 30, 1867, *Sexes, Nativities, Ages and Percentage at each Period.*

PERIODS.	Males.	Females.	Total.	United States.	Foreign.
Four weeks ending January 26th, 1867	795	654	1,449	907	542
Four weeks ending February 23d, 1867	944	775	1,719	1,100	619
Five weeks ending March 30th, 1867	1,093	936	2,029	1,330	699
Total.	2,832	2,365	5,197	3,337	1,860

PERIODS.	Under 1 yr. of age.		1-2.		2-3.		3-4.		4-5.		5-10.		10-15.		15-20.		20-25.		25-30.		30-35.		35-40.		40-45.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Four weeks ending Jan. 26th, 1867	214	139	65	68	52	31	26	23	18	10	39	36	7	12	12	16	30	26	49	49	41	35	51	41	37	18
Four weeks ending Feb. 23d, 1867,	274	195	96	78	33	44	30	16	21	17	33	32	14	12	18	15	38	36	39	53	55	50	54	45	44	25
Five weeks ending Mar. 30th, 1867	320	253	99	84	58	42	31	27	23	14	42	28	25	9	13	24	48	49	57	57	48	51	59	60	49	40
Total by sexes..............	808	587	260	230	143	117	87	66	62	41	114	96	46	33	43	55	116	111	145	159	144	136	164	146	130	83
Percent. by sexes on total mortality	15.55	11.30	5.00	4.43	2.75	2.25	1.67	1.27	1.19	.79	2.19	1.85	.89	.64	.83	1.06	2.23	2.13	2.79	3.06	2.77	2.62	3.15	2.81	2.50	1.59
Total of both sexes.	1,395		490		260		153		103		210		79		98		227		304		280		310		213	
Percentage of both sexes on total mortality of the quarter	26.85		9.43		5.00		2.94		1.98		4.04		1.53		1.89		4.36		5.85		5.39		5.96		4.09	

PERIODS.	45-50.		50-55.		55-60.		60-65.		65-70.		70-75.		75-80.		80-85.		85-90.		90-95.		95-100.		100-110.		Total by sexes.		Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Four weeks ending Jan. 26th, 1867	37	25	29	25	22	16	20	21	3	13	13	19	11	12	8	13	5	3	1	2	....	1	....	....	795	654	1,449
Four weeks ending Feb. 23d, 1867,	37	24	32	19	42	21	31	23	18	19	14	14	10	12	6	13	4	8	1	2	....	2	....	....	944	775	1,719
Five weeks ending Mar. 30th, 1867	44	30	44	34	26	23	35	24	29	26	7	22	14	18	12	8	8	8	1	2	1	2	....	1	1,093	936	2,029
Total by sexes..............	118	79	105	78	90	60	86	68	55	58	34	55	35	42	26	34	17	19	3	6	1	5	....	1	2,832	2,365	5,197
Percent. by sexes on total mortality	2.27	1.51	2.01	1.50	1.73	1.15	1.65	1.31	1.06	1.12	.68	1.06	.70	.81	.50	.68	.33	.37	.06	12	.02	.10	....	.02	54.54	45.53	
Total of both sexes.	197		183		150		154		113		89		77		60		36		9		6		1				
Percentage of both sexes on total mortality of the quarter........	3.78		3.51		2.88		2.96		2.18		1.74		1.51		1.18		.70		.18		.12		.02				

DEATHS FROM ZYMOTIC DISEASES.

NEW YORK.—DEATHS FROM SMALL-POX, MEASLES, SCARLATINA, DIPHTHERIA, WHOOPING-COUGH, TYPHOID FEVER, TYPHUS FEVER, CHOLERA, CHOLERA INFANTUM, DIARRHŒAL MALADIES, AND OTHER ZYMOTIC DISEASES.

Registered during the quarter ending Saturday, March 30, 1867.

WARDS.	Small-pox.	Measles.	Scarlatina.	Diphtheria.	Croup.	Whooping-cough.	Typhus Fever.	Typhoid Fever.	Cholera.	Cholera Infantum.	Cholera Morbus and other Diarrhœal Diseases.	Other Zymotic Diseases.	Total Deaths from Zymotic Diseases.	Deaths by Accident or Negligence. (*Coroners' Inquests.*)	Total Deaths from all Causes.	Total Population (in Wards), Census of 1865.	Percentage of Zymotic Deaths on Total Mortality.	Death Rate per 1,000 Annually of the Population from Zymotic Causes.	Death Rate per 1,000 Annually of the Population from all Causes.
First		1	2	1	4	2	1	3	....	....	4	7	25	4	89	9,852	28.09	10.55	36.14 [a]
Second	....	....	....	....	....	....	....	....	....	....	......	....	......	4	12	1,194	....	....	40.20
Third	....	....	1	1	1	....	....	....	....	....	......	1	4	1	14	3,367	38.57	4.75	16.63
Fourth	....	10	8	4	5	3	1	2	....	....	3	6	42	5	169	17,352	24.85	11.98	38.95
Fifth	....	....	4	2	1	....	1	....	....	....	2	9	19	11	145	18,205	13.10	4.17	31.86 [b]
Sixth	1	5	12	8	13	1	1	1	....	....	2	5	49	6	185	19,754	26.49	9.92	37.46 [c]
Seventh	....	1	9	1	7	3	....	6	....	....	3	8	38	10	218	36,962	17.43	4.11	23.59
Eighth	....	....	8	5	6	3	2	4	....	....	....	10	38	5	219	30,098	17.35	5.05	29.10
Ninth	....	....	9	4	8	2	....	5	....	....	4	11	43	9	249	38,504	17.23	4.47	25.87 [d]
Tenth	....	6	13	4	3	1	1	7	....	1	1	6	43	......	210	31,537	20.48	5.45	26.64
Eleventh	....	4	26	4	12	4	6	6	....	....	8	14	84	5	370	58,953	22.70	5.70	25.10
Twelfth	....	7	10	1	4	....	7	8	....	....	24	28	89	6	250	28,259	35.60	12.60	35.39 [e]
Thirteenth	....	...	9	....	5	4	2	....	....	1	2	5	28	3	156	26,388	17.89	4.24	23.65
Fourteenth	....	1	8	4	4	1	4	3	....	1	1	10	37	6	140	23,382	33.57	8.04	23.95 [f]
Fifteenth	...	1	4	3	1	1	....	....	....	....	......	....	10	6	104	25,572	9.61	1.56	16.26
Sixteenth	....	4	14	7	1	....	....	2	....	....	4	11	43	8	246	41,972	17.48	4.09	23.44
Seventeenth	1	6	32	10	14	2	3	9	....	2	8	20	107	14	487	79,563	21.99	5.38	24.48 [g]
Eighteenth	....	1	14	2	2	3	1	4	....	....	4	3	34	4	248	47,613	13.71	2.86	20.83

Nineteenth	3	6	17	5	8	1	19	7	....	.. .	54	31	151	8	664	39,945	22.74	15.12	66.49 g
Twentieth	....	....	39	6	4	...	1	6	....	....	7	13	76	7	353	61,884	21.53	4.91	22.82 h
Twenty-first	....	....	8	2	7	2	2	3	....	....	5	21	50	23	393	38,669	12.72	5.17	40.65 i
Twenty-second	....	....	17	5	8	5	2	6	....	....	3	11	57	6	276	47,361	20.65	4.81	23.31
Totals	5	53	264	79	118	38	54	82	....	5	139	230	1,067	151	5,197	726,386	20.53	5.87	28.62

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a Castle Garden, 3. *b* New York Hospital, 31. *c* City Prison, 2. *d* St. Vincent's Hospital, 29. *e* Bloomingdale Lunatic Asylum, 10. Randall's Island, 10. Ward's Island, 126. *f* R. C. Orphan Asylum, 2. *g* Colored Home. 28; E. & P. Hosp., 3; City Lunatic Asylum, 25; Alms House, 191; N. Y. Orphan Asylum, 1; Penitentiary 3; Small-pox, 3; Charity Hospital, 106; Workhouse, 1; Nursery and Child's Hospital, 25; St. Luke's Hospital, 41. *h* Mt. Sinai Hospital, 4. *i* Bellevue Hospital, 171.

The winter was colder than the average of the past ten winters, and the quantity of snow and rain was greater than usual for the winter quarter. The total quantity of snow and rain was equal to 14.08 inches depth of water, and the mean temperature 30½° Fahrenheit. The average quantity of water falling, in rain and snow, in the corresponding period of 25 years, on the ground now occupied by Columbia College, was 12.75 inches, and the mean temperature was 32.83°, or only 2.33° warmer than the temperature of the winter quarter of 1866.

Poverty, ignorance, thriftlessness, and a bad way of living, which prevail among the lower classes, lead them to the violation of every hygienic rule during such inclement weather. And some of the obvious results of the severity of the winter found a permanent record in the bills of mortality. The excess in the death-rate was chiefly shared between phthisis pulmonalis, the inflammatory diseases of the lungs, and the infectious diseases of childhood. Pulmonary diseases increased the death-rate considerably, as will be shown in an abstract of mortality by this class of causes, in a subsequent section of the report. Comparing the ratio which this class of causes bore to that in the nine months ending in the preceding October, we find the following:

Percentage of the chief pulmonary diseases upon the total number of deaths by all cases.

NEW YORK.

	Phthisis.	Congest'n of lungs.	Bronchitis.	Pneumonia.	Total number of deaths in the period by all causes.
In the quarter ending March 30, 1867..............	16.47	1.69	3.68	8.49	5,484
Nine months ending October 1, 1866...............	12.09	1.21	1.74	4.79	21,206

BROOKLYN.

Quarter ending March 30, 1867....................	16.22	3.76	3.36	7.57	2,022
Six months ending October 1, 1866	9.69	0.77	1.32	2.97	5,293

The total number of deaths by diseases of the respiratory organs, exclusive of croup, in this winter quarter, was 1,757, inclusive of 903 by phthisis, in New York; and 642, inclusive of 328 by phthisis, in Brooklyn. This mortality by lung diseases exceeded that from the so-called zymotic diseases by nearly 40 per cent., notwithstanding the presence of infectious fevers; and the winter's experience proved how true it is that, "if the tenant-house population is so fortunate as to escape fevers, then it is found that these lung diseases have a mortgage, with certain early foreclosure, on the crowded poor."*

Food supplies were sufficiently abundant, but were held at unusually high prices, so that the poorer classes felt the pressure of their poverty, and "made greater demands upon the sources of charity than had been experienced since 1857."† But the kind of want that most invited disease, and most diminished the chances of life, was that which herds the laboring classes together in unhealthy tenements. To exhibit proof of this fact, we need only contrast death-records of the Fourth and Sixth Wards with those of the fifteenth Ward, where, in winter, the greatest extreme in the sanitary condition of dwellings, *in very densely populated districts*, are witnessed. We refer back to the abstracts on pages 150 and 160, and find the following summary:

WARD.	DEATHS IN THE QUARTER ENDING DECEMBER 31, 1866.					IN QUARTER ENDING MARCH 30, 1867.			
	Total population.	Total number of deaths.	Per cent. of the zymotic causes in the total list.	Rate per 1,000 annually on population of the ward.	Annual death-rate per 1,000 (for quarter).	Total number of deaths.	Per cent. of the zymotic causes in the total list.	Rate per 1,000 annually on population of the ward.	Annual death-rate per 1,000 (for quarter).
Fourth	17,352	158	13.82	5.76	36.42	169	24.85	11.98	38.95
Sixth..........	19,754	240	33.33	16.20	48.60	145	36.40	9.92	37.46
Fifteenth	25,572	100	22.00	3.45	15.64	104	9.61	1.56	16.26

Thus it appears that, notwithstanding the disappearance of cholera, which had its chief seat in the Sixth Ward, and notwithstanding the salutary effects of cold in the filthy streets, the miserable inhabitants of that ward *continued to die at about the same rate in winter as in autumn;* while in the Fourth Ward, where all the dwellings are tenant-houses of the most over-crowded and disease-producing description, in winter, the death-rate was even greater in winter than in autumn, and it was in this ward that lung diseases and all kinds of inflammatory and constitutional causes produced most fatal results. In such portions of the metropolis the foes to health and social decency intermit their deadly work neither in winter nor in summer,

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* Letter from S. B. Halliday, Esq., Superintendent of the Five Points House of Industry, January, 1867.

† This fact has been stated to the writer by Robert M. Hartley, Esq., the Corresponding Secretary of New York Association for Improving the Condition of the Poor.

State of the Public Health in the Three Months (*Spring Quarter*) *ending June*, 30, 1867.—The spring months were in no respect peculiarly unhealthful, except in two particulars, namely, in the continued prevalence of measles and scarlatina, and in the excessive extent and suddenness of the alternations of temperature. The mean temperature in April was 52°; in May 54°, and in June 68° Fahrenheit. The month of March protracted the winter far into the spring, for its mean temperature was the same as that of February, viz.: 34° Fahrenheit.

The total mortality in New York amounted to 5,121, or 76 less than in the winter quarter; while in Brooklyn the total number of deaths was 1,564, or 298 less than in the winter. The increased fatality of measles, and of the diarrhœa that often ensued upon that malady, caused the greater part of the increase in the total quantity of mortality by the zymotic class of diseases. In the second week of May the death-rate began to fall off, and during the six following weeks, human life in New York and Brooklyn enjoyed greater security than in any period of the same duration in several years. The total number of deaths in the six weeks, from May 18 to June 22 was 2,231 in New York, and 800 in Brooklyn; or, an average of 372 per week in the former, and 1,333 in the latter city.

Abstract of Deaths Registered in the City of New York in the Quarter ending June 29, 1867, Sexes, Nativities, Ages and Percentage at each Period.

PERIODS.	Males.	Females.	Total.	United States.	Foreign.
Four weeks ending April 27th, 1867	826	811	1,637	1,089	548
Four weeks ending May 25th, 1867	843	747	1,590	1,026	564
Five weeks ending June 29th, 1867	1,029	865	1,894	1,256	638
Total	2,698	2,423	5,121	3,371	1,750

PERIODS.	Under 1 yr. of age.		1-2.		2-3.		3-4.		4-5.		5-10.		10-15.		15-20.		20-25.		25-30.		30-35.		35-40.		40-45.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Four weeks ending April 27th, 1867	243	233	76	79	33	39	30	27	25	11	34	30	9	12	21	19	27	43	33	45	45	48	36	49	34	29
Four weeks ending May 25th, 1867	257	196	81	74	29	45	20	23	8	14	33	35	14	17	23	4	32	37	37	34	34	38	45	46	40	23
Five weeks ending June 29th, 1867	308	230	111	97	50	47	48	19	19	20	42	37	24	14	14	24	48	47	60	43	48	45	59	51	37	31
Total by sexes	808	659	268	250	112	131	98	69	52	45	109	102	47	43	58	47	107	127	130	122	127	131	140	146	111	83
Percent. by sexes on total mortality	15.78	12.87	5.23	4.88	2.19	2.56	1.91	1.35	1.02	.88	2.13	1.99	.92	.84	1.13	.92	2.11	2.48	2.54	2.38	2.48	2.56	2.73	2.85	2.17	1.62
Total of both sexes	1,467		518		243		167		97		211		90		105		234		252		258		286		194	
Percentage of both sexes on total mortality of the quarter	28.65		10.11		4.75		3.26		1.90		4.12		1.76		2.05		4.59		4.92		5.04		5.58		3.79	

PERIODS.	45-50.		50-55.		55-60.		60-65.		65-70.		70-75.		75-80.		80-85.		85-90.		90-95.		95-100.		100-110.		Total by sexes.		Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Four weeks ending April 27th, 1867	38	26	30	19	27	17	24	19	26	20	19	17	8	11	3	11	3	6	2	1	....	....	....	....	826	811	1,637
Four weeks ending May 25th, 1867	44	24	32	19	27	23	31	25	21	32	15	15	9	5	10	9	1	4	...	4	....	....	....	1	843	747	1,590
Five weeks ending June 29th, 1867	44	22	22	29	18	17	16	22	22	19	16	23	14	12	5	10	3	5	1	1	....	....	....	....	1,029	865	1,894
Total by sexes	126	72	84	67	72	57	71	66	69	71	50	55	31	28	18	30	7	15	3	6	....	....	....	1	2,698	2,423	5,121
Percent. by sexes on total mortality	2.46	1.41	1.64	1.31	1.41	1.11	1.39	1.29	1.35	1.39	.98	1.07	.61	.55	.35	.59	.14	.29	.06	.12	....	....	....	.02	52.73	47.33	
Total of both sexes	198		151		129		137		140		105		59		48		22		9		....		1				
Percentage of both sexes on total mortality of the quarter	4.87		2.95		2.52		2.68		2.74		2.05		1.16		.94		.43		.18		....		.02				

DEATHS FROM ZYMOTIC DISEASES.

NEW YORK.—DEATHS FROM SMALL-POX, MEASLES, SCARLATINA, DIPHTHERIA, WHOOPING-COUGH, TYPHOID FEVER, TYPHUS FEVER, CHOLERA, CHOLERA INFANTUM, DIARRHŒAL MALADIES, AND OTHER ZYMOTIC MALADIES.

Registered during the quarter ending June 29th, 1867.

WARDS.	Small-pox.	Measles.	Scarlatina.	Diphtheria.	Croup.	Whooping-cough.	Typhus Fever.	Typhoid Fever.	Cholera.	Cholera Infantum.	Cholera Morbus, and other Diarrhœal Diseases.	Other Zymotic Diseases.	Total Deaths from Zymotic Diseases.	Deaths by Accident or Negligence. (*Coroners' Inquests.*)	Total Deaths from all Causes.	Total Population (in wards), Census of 1865.	Percentage of Zymotic Deaths on Total Mortality.	Death-rate per 1,000 Annually of the Population from Zymotic Causes.	Death-rate per 1,000 of the Population from all Causes.
First	....	3	1	1	1	....	1	1	....	4	10	5	27	8	81	9,852	27.27	10.96	41.21 *a*
Second	....	....	2	....	....	....	....	2	....	....	......	3	7	5	17	1,194	41.18	23.45	56.95
Third	....	....	1	....	....	....	....	1	....	....	......	.....	2	6	20	3,367	10.00	2.39	23.76
Fourth	....	18	5	1	....	2	3	....	....	....	1	12	42	3	164	17,352	25.61	9.68	37.81
Fifth	....	3	....	1	3	2	1	3	....	2	1	7	23	10	83	18,205	19.17	5.05	26.37 *b*
Sixth	1	3	9	4	4	....	3	4	....	1	6	7	42	2	184	19,754	22.70	8.00	37.44 *c*
Seventh	....	15	13	2	5	4	2	1	....	4	3	12	61	11	258	36,962	23.64	6.60	27.92
Eighth	....	17	7	2	3	1	2	2	....	....	4	8	46	13	223	30,098	20.63	6.11	26.31
Ninth	....	7	9	4	....	1	....	9	....	2	7	10	49	8	205	38,504	22.17	5.09	22.95 *d*
Tenth	....	5	5	2	3	3	1	....	....	4	5	6	34	7	218	31,537	15.60	4.31	27.96
Eleventh	1	28	24	7	5	1	2	5	....	8	9	3	93	13	376	58,953	24.73	6.31	25.51
Twelfth	....	32	7	1	2	2	19	16	....	....	10	46	135	9	130	28,259	46.71	19.46	40.91 *e*
Thirteenth	....	14	8	4	2	1	....	1	....	1	4	6	41	2	176	26,388	23.30	6.21	26.53
Fourteenth	....	5	3	2	3	....	1	4	....	3	3	6	30	4	126	23,382	23.62	5.13	21.73 *f*
Fifteenth	....	3	2	1	....	....	....	2	....	....	......	3	11	3	83	25,572	13.25	1.76	12.98
Sixteenth	....	1	9	2	3	2	....	5	....	3	3	11	39	6	207	41,972	18.84	3.00	19.73
Seventeenth	1	40	26	9	14	3	2	2	....	8	5	19	129	14	516	79,563	25.00	6.49	25.94
Eighteenth	....	10	21	5	2	5	1	3	....	3	5	4	59	6	261	47,613	22.60	4.96	21.93

Nineteenth	3	9	13	1	....	....	19	5	....	2	72	45	169	15	194	39,945	29.92	1.69	66.56[g]
Twentieth	....	6	10	1	5	4	2	6	....	2	10	12	58	12	317	61,884	17.74	3.75	21.13[h]
Twenty-first	....	3	4	2	3	3	1	3	1	3	9	23	55	33	187	38,669	15.80	5.69	35.99[i]
Twenty-second	....	6	15	4	2	....	1	5	....	3	9	6	51	5	221	47,361	23.08	4.37	12.33
Totals	6	228	194	56	60	34	61	80	1	53	176	254	1,203	195	4,247	726,386	23.49	6.64	28.18

[a] Castle Garden, 16; Fort Columbus, 2. [b] N. Y. Hospital, 37. [c] City Prison, 1. [d] St. Vincent's Hospital, 16. [e] N. Y. Juvenile Asylum, 1; Randall's Island, 17; Ward's Island, 134; Bloomingdale Lunatic Asylum, 7. [f] R. C. Orphan Asylum, 1. [g] Alms House, 227; Colored Home, 17; R. C. Orphan Asylum, 1; City Lunatic Asylum, 24; Epileptic and Paralytic Hospital, 6; Work-House, 3; Penitentiary, 1; Small-Pox, 5; Charity Hospital, 126—Total on Blackwell's Island, 392; Nursery and Child's Hospital, 33; St. Luke's Hospital, 28. [h] Mt. Sinai Hospital, 10. [i] Bellevue Hospital, 161.

The high temperature of the last three weeks in June produced no other very obvious effect upon the public health than slightly to increase the amount of infant mortality. Forty more infants under one year of age perished in New York in those twenty-one days than in the preceding three weeks; but there was a decrease in the number of deaths at the adult ages, so that the total mortality was less by fifteen than in three weeks ending June 9. Both cities seemed to be free from Asiatic cholera, only one fatal case having occurred in the quarter, and that an isolated one, on the 29th of May. Though the season was excessively wet, the rainfall in the quarter amounting to 15.54 inches of water, and in June alone to 11.65 inches, the rain storms did a sanitary work of street-scavenging and sewer-flushing which more than compensated for all insalubrious effects of unusual atmospheric humidity and flooding rain falls.

State of the Public Health in the Three Months (*Summer Quarter*) *ending in September*, 1867.—The sanitary history of the metropolis the past summer was peculiar only the almost complete immunity that was had in regard to cholera and yellow fever. For New York and Brooklyn were certainly menaced by each of these exotic pestilences, and there was just ground of fear that the excessive humidity which prevailed in June, July and August would contribute to the propagation of these unwelcome scourges. Perpetual rains, the saturated soil, and the unusually humid and beclouded atmosphere gave to our New York summer the meteorological and some other physical characteristics of a summer in the Delta of the Mississippi or along the Eastern Deltas of the Mediterranean.

In the three hot months ending September 1, the rainfall at Essex Market, the point of observation nearest the centre of the metropolis, amounted to no less than 25.86 inches of water. The average degree of humidity, in the cities, was 68,—total saturation being regarded as 100,—and the mean temperature was 68° in June, 73° in July, and 74_0 in August.

The great rainfalls continued, week after week, to cleanse and flush the pavements, gutters, and sewers of both cities, and the atmosphere, like the streets, seemed to be less contaminated by putrescence than in previous summers, the fifteen years past. Yet there were particular regions in both cities that were not cleansed and rendered healthful by the rain storms. These were the flat and badly-drained areas, such as the Eleventh Ward, in New

York, and the Sixteenth, in Brooklyn. In these, and other very defectively-drained places, there manifestly were special causes of disease and of fatality in disease, for a great excess of deaths was steadily reported from these supersaturated and filth-sodden regions. In the first-mentioned ward, six hundred of the inhabitants died during the three months, and gave a death-rate for the quarter equal to 40.71 per 1,000, annually, while the Fifteenth Ward, a mile west of this, suffered a death-rate only equal to 17.20 per 1,000. In the Sixteenth Ward, Brooklyn, the death-rate in the quarter was equal to 54.47 per 1,000 of the inhabitants yearly, while, in the adjacent and more perfectly-drained Thirteenth Ward of that city, the rate of mortality was only equal to 30.12 per 1,000, annually. In view of this and similar general results, and after careful analysis of the chief causes of the preventable kinds of disease that produce the difference in death-rates in different places, never overlooking, meanwhile, the social and domestic conditions affecting the chances of life, we find abundant evidence that even in these graded and sewered cities, there exist, in certain localities, such defects of drainage and cleansing, below as well as on the surface of the soil upon which the people pile their dwellings, that the most preventable, yet, amidst such surroundings, the most inevitable of diseases and deaths are sure to prevail, and that in a wet season these evils are excessive.

Pursuing this enquiry concerning preventable sickness and deaths in particular regions of New York and Brooklyn, and in the suburbs within the metropolitan district, the practical lessons are found to be full of interest, and never have they been more so than during the present year; but as the presentation of this subject cannot be made in this place, we will only allude here to the fact that in those regions of both cities yet sparsely settled, and that are being graded and prepared for occupation, the rate of mortality and the prevalence of sickness far exceeded the average in the closely built-up, well-sewered quarters of the cities. Portions of the Twenty-second and Twelfth Wards in New York, and of the Eighth and Ninth in Brooklyn, aptly illustrated this fact, and convincingly proved the necessity of thorough drainage and skillful preparation of the ground upon which dwellings are to be erected and populations invited. Health-blighting malaria and deadly miasmata are not produced in marshy jungles and stagnant ponds only; for the prolific soil, saturated with decaying organic matter, the obstructed streamlets, the earth-covered basin, and the freshly-stirred surface, reeking with putrescent exhalations, in the hot season, are sources of much fatal sickness in certain places now undergoing "improvement" in the cities and villages of this district. This vitally-important subject is thus mentioned in our review of the summer quarter, because its lessons were practically most important in the hygienic records of the season.

The subjoined abstracts exhibit a condensed review of the chief causes of death in New York, in four successive periods of four weeks each, including the entire summer. The other abstracts present the ordinary summaries for the quarter. The reader of these pages and of the appended report, by Deputy Registrar, Dr. Stiles, of Brooklyn, may advantageously refer to the Notes on the sanitary topography and comparative healthfulness of the several wards, presented in a subsequent section of the present report. A ward map of the two cities will likewise aid the reader, and for this purpose it will be desirable to refer to the city (ward) map of the cholera fields, which is inserted in a subsequent section of this report.

Abstaact of deaths Registered in the city of New York in the Quarter ending September 28, 1867, Sexes, Nativities, Ages and Percentage at each Period.

PERIODS.	Males.	Females.	Total.	United States.	Foreign.
Four weeks ending July 27, 1867	1,207	1,049	2,256	1,723	533
Five weeks ending August 31, 1867	1,691	1,491	3,182	2,364	818
Four weeks ending September 28, 1867	1,132	946	2,078	1,486	592
Total	4,030	3,486	7,516	5,573	1,943

PERIODS.	Under 1 yr. of age.		1-2.		2-3.		3-4.		4-5.		5-10.		10-15.		15-20.		20-25.		25-30.		30-35.		35-40.		40-45.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Four weeks ending July 27, 1867	537	448	203	154	50	49	23	21	15	12	42	29	16	10	17	18	30	35	27	44	31	42	40	44	32	33
Five weeks ending Aug. 31, 1867	742	611	281	277	55	64	22	21	22	16	42	17	21	9	29	27	51	55	46	58	57	53	60	56	47	35
Four weeks ending Sept. 28, 1867	421	362	174	173	39	41	24	12	14	10	31	19	16	6	14	25	46	35	49	39	42	36	61	37	35	27
Total by sexes	1700	1421	658	604	144	154	69	54	51	38	115	65	53	25	60	70	127	125	122	141	130	131	161	137	114	95
Percent. by sexes on total mortality	22.62	18.91	8.75	8.04	1.92	2.05	.92	.72	.68	.51	1.53	.86	.70	.33	.80	.93	1.69	1.66	1.62	1.87	1.73	1.74	2.14	1.83	1.52	1.26
Total of both sexes	3,121		1,262		298		123		89		180		78		130		252		263		261		298		209	
Percentage of both sexes on total mortality of the quarter.	41.53		16.79		3.97		1.64		1.19		2.39		1.03		1.73		3.35		3.49		3.47		3.97		2.78	

PERIODS.	45-50.		50-55.		55-60.		60-65.		65-70.		70-75.		75-80.		80-85.		85-90.		90-95.		95-100.		100-110.		Total by sexes.		Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Four weeks ending July 27, 1867	37	25	27	15	20	9	9	19	17	10	8	8	6	10	8	6	1	5	...	2	1	....	....	1	1,207	1,049	2,256
Five weeks ending Aug. 31, 1867	46	37	43	33	33	20	33	32	20	28	21	17	9	12	7	6	2	5	1	2	1	....	....	....	1,691	1,491	3,182
Four weeks ending Sept. 28, 1867	44	26	32	29	22	21	18	12	20	16	17	12	8	8	4	4	...	3	1	3	....	....	....	....	1,132	946	2,078
Total by sexes	127	88	102	67	75	50	70	63	57	54	46	37	23	30	19	16	3	13	2	7	2	....	....	1	4,030	3,486	7,516
Percent. by sexes on total mortality	1.69	1.17	1.36	.89	1.00	.67	.93	.84	.76	.72	.61	.49	.31		.25	.21	.04	.17	.03	.09	.03	....	....	.01	53.63	46.37	
Total of both sexes	215		169		125		133		111		83		53		35		16		9		2		1				
Percentage of both sexes on total mortality of the quarter	2.86		2.25		1.67		1.77		1.43		1.10		.71		.46		.21		.12		.03		.01				

DEATHS FROM ZYMOTIC DISEASFS.

NEW YORK.—DEATHS FROM SMALL-POX, MEASLES, SCARLATINA, DIPHTHERIA, WHOOPING-COUGH, TYPHOID FEVER, TYPHUS FEVER, CHOLERA, CHOLERA INFANTUM, DIARRHŒAL MALADIES, AND OTHER ZYMOTIC DISEASES.

Registered during the quarter ending September 30th, 1867.

WARDS.	Small-Pox.	Measles.	Scarlatina.	Diphtheria.	Croup.	Whooping-cough.	Typhus Fever.	Typhoid Fever.	Cholera.	Cholera Infantum.	Cholera Morbus and other Diarrhœal Diseases.	Other Zymotic Diseases.	Total deaths from Zymotic Diseases.	Deaths by Accident or Negligence. (*Coroners' Inquests.*)	Total Deaths from all Causes.	Total Population (in Wards), Census of 1865.	Percentage of Zymotic Deaths on Total Mortality.	Deaths per 1,000 Annually of the Population from Zymotic Causes.	Deaths per 1,000 Annually of the Population from all Causes.
First	....	2	....	1	3	....	....	5	2	30	24	1	68	12	126	9,852	46.89	27.60	58.86 *a*
Second	...	....	....	....	...	....	....	....	....	4	....	.....	4	2	12	1,194	33.33	13.40	40.20
Third	....	....	1	....	....	....	....	....	....	2	1	1	5	7	26	3,367	19.23	5.94	30.89
Fourth	....	....	2	3	3	1	....	....	....	51	12	6	78	10	216	17,352	36.12	17.97	49.79
Fifth	....	8	2	1	1	1	2	4	1	28	13	18	79	17	145	18,205	44.13	17.36	39 33 *b*
Sixth	....	4	3	....	1	1	1	....	1	63	17	12	103	7	213	19,754	47.03	20.87	44.35 *c*
Seventh	....	7	4	1	1	6	1	2	....	121	32	7	182	9	389	36,962	46.78	19.69	42.09
Eighth	....	3	1	2	1	3	1	4	1	61	27	4	108	15	298	30,098	36.24	14.35	39.60
Ninth	....	2	2	1	....	....	....	9	....	42	29	5	90	10	218	38,504	37.89	9.35	25.35 *d*
Tenth	....	1	2	5	2	2	....	3	....	52	36	8	111	4	307	31,537	36.16	14.08	58.94
Eleventh	1	19	8	9	4	...	7	3	2	103	84	8	248	13	591	58,953	41.33	16.82	40.71 *e*
Twelfth	....	16	3	1	2	1	12	12	....	44	68	35	194	19	223	28,259	49.11	23.92	55.91 *f*
Thirteenth	....	6	5	3	1	3	....	1	....	53	28	2	102	4	235	26,388	43.40	15.46	35.62
Fourteenth	....	5	2	2	2	....	2	4	2	47	12	4	82	5	228	23,382	35.92	14.03	39.00
Fifteenth	....	....	....	....	....	2	....	2	1	15	13	5	38	7	110	25,572	34.91	5.94	17.20
Sixteenth	....	7	10	2	3	4	....	4	3	55	23	6	117	6	293	41,972	39.95	11.15	27.92
Seventeenth	1	17	19	5	5	8	1	5	1	156	105	16	339	12	756	79,563	44.79	17.04	38.00
Eighteenth	....	15	4	3	2	1	1	3	....	79	37	5	150	8	378	47,613	39.70	12.60	31.76

Nineteenth	1	15	5	3	2	5	2	10	2	94	159	153	451	12	347	39,945	49.88	45.16	90.52 g
Twentieth	....	22	8	5	2	4	....	2	4	120	73	13	253	14	574	61,884	42.95	16.35	38.07 h
Twenty-first	....	4	2	2	1	2	....	5	4	51	67	21	159	50	293	38,669	32.23	16.45	50.99 i
Twenty-second	....	22	6	4	4	2	....	6	1	85	88	14	232	14	500	47,361	46.40	19.59	42.23
Totals	3	175	89	53	40	46	30	84	25	1,356	948	344	3,193	257	6,478	726,386	41.15	17.58	41.39

a Castle Garden, 8; Fort Columbus, 2; Fort Wood, 9. *b* N. Y. Hospital, 34. *c* City Prison, 6. *d* St. Vincent's Hospital, 26. *e* St. Francis' Hospital, 9. *f* Ward's Island, 157; L. & W. Orphan Asylum, 1; N. Y. Orphan Asylum, 2; Randall's Island, 10; Bloomingdale Lunatic Asylum, 2. *g* City Lunatic Asylum, 1; Epileptic and Paralytic Hospital, 7; Alms House, 305; Colored Home, 20; Workhouse, 1; Penitentiary, 4; Small-Pox, 1; Charity Hospital, 113—Total on Blackwell's Island, 472; Nursery and Child's Hospital, 39; St. Luke's Hospital, 26. *h* Mount Sinai Hospital, 15. *i* Bellevue Hospital, 200.

DEATHS FROM ZYMOTIC DISEASES.

NEW YORK.—DEATHS FROM SMALL-POX, MEASLES, SCARLATINA, DIPHTHERIA, WHOOPING-COUGH, TYPHOID FEVER, TYPHUS FEVER, CHOLERA, CHOLERA INFANTUM, DIARRHŒAL MALADIES, AND OTHER ZYMOTIC DISEASES.

Registered during the four weeks ending Saturday, July 13th, 1867.

WARDS.	Small-Pox.	Measles.	Scarlatina.	Diphtheria.	Croup.	Whooping-cough.	Typhus Fever.	Typhoid Fever.	Cholera.	Cholera Infantum.	Cholera Morbus, and other Diarrhœal Diseases.	Other Zymotic Diseases.	Total Deaths from Zymotic Diseases.	Deaths by Accident or Negligence. (*Coroners' Inquests.*)	Total Deaths from all Causes.	Percentage of Zymotic Deaths on Total Mortality.
First	..	1	....	....	....	..	....	....	..	8	2	1	12	10	39	30.77
Second	..	....	....	....	....	..	....	....	..	....	....	....	.. .	3	6	......
Third	..	....	2	....	....	..	....	....	..	....	....	....	2	2	7	28.57
Fourth	..	5	2	....	2	..	....	....	..	7	....	5	21	4	63	33.33
Fifth	..	5	1	....	1	..	....	1	..	2	2	1	13	6	44	29.55
Sixth	..	2	....	....	....	1	....	1	1	7	1	2	15	3	52	28.85
Seventh	..	7	5	....	2	..	1	....	..	18	3	....	36	2	106	33.96
Eighth	..	4	2	....	1	..	....	2	..	4	5	2	20	9	75	26.66
Ninth	..	....	5	....	....	..	....	1	..	2	6	2	16	6	58	27.59
Tenth	..	....	1	1	2	..	....	....	..	7	4	1	16	1	72	22.22
Eleventh	1	10	9	2	1	..	2	....	..	17	15	....	57	3	167	34.13
Twelfth	..	13	2	....	1	..	6	7	..	4	3	7	43	6	90	47.77
Thirteenth	..	3	2	....	....	..	....	....	..	7	7	1	20	....	64	31.25
Fourteenth	..	2	....	1	1	..	1	1	..	4	4	2	16	....	51	31.37
Fifteenth	..	2	....	....	....	..	....	....	..	1	1	....	4	....	19	21.05
Sixteenth	..	2	1	2	....	..	....	....	..	5	5	2	17	1	67	25.37
Seventeenth	..	8	8	....	3	..	....	....	..	24	9	5	57	3	188	30.32
Eighteenth	..	12	2	1	....	..	....	1	..	10	4	2	32	3	88	36.36
Nineteenth	1	7	....	1	1	..	3	2	..	6	16	17	54	3	170	31.78
Twentieth	..	10	5	1	....	1	1	....	..	13	11	2	44	3	128	34.37
Twenty-first	..	1	....	....	....	..	....	....	..	2	8	3	14	8	105	13.33
Twenty-second	..	5	2	1	1	.	....	2	..	9	11	1	32	4	86	37.21
Totals	2	99	49	10	16	2	14	18	1	157	117	56	541	80	1745	31.00

DEATHS FROM ZYMOTIC DISEASES.

NEW YORK.—Deaths from Small-Pox, Measles, Scarlatina, Diphtheria, Whooping-cough, Typhoid Fever, Typhus Fever, Cholera, Cholera Infantum, Diarrhœal Maladies, and other Zymotic Diseases.

Registered during the four weeks ending Saturday, August 10th, 1867.

WARDS.	Small-Pox.	Measles.	Scarlatina.	Diphtheria.	Croup.	Whooping-cough.	Typhus Fever.	Typhoid Fever.	Cholera.	Cholera Infantum.	Cholera Morbus, and other Diarrhœal Diseases.	Other Zymotic Diseases.	Total Deaths from Zymotic Diseases.	Deaths by Accident or Negligence. (Coroners' Inquests.)	Total Deaths from all Causes.	Percentage of Zymotic Deaths on Total Mortality.
First	..	1	....	1	...	....	..	4	1	15	7	....	29	2	52	55.77
Second	..	....	....	....	...	....	..	....	..	3	....	....	3	2	5	60.00
Third	..	....	....	....	...	....	..	...	..	2	....	....	2	1	6	33.33
Fourth	..	....	1	....	...	....	..	....	..	24	4	....	29	2	68	42.65
Fifth	..	3	1	1	...	....	..	3	1	16	3	4	32	4	64	50.00
Sixth	..	1	1	....	...	....	..	....	..	26	4	2	34	3	64	53.12
Seventh	..	1	....	1	...	3	..	....	..	59	9	3	76	1	130	58.46
Eighth	..	2	...	1	...	2	1	2	1	30	9	1	49	3	108	45.37
Ninth	..	2	....	....	...	....	..	3	..	24	11	2	42	2	88	47.82
Tenth	..	1	1	3	...	2	.	2	..	27	15	2	53	....	115	46.09
Eleventh	..	8	2	4	2	....	3	1	..	57	36	3	116	4	241	48.13
Twelfth	..	6	1	....	...	....	1	3	..	23	19	12	65	11	135	48.16
Thirteenth	..	2	1	1	1	2	..	1	..	24	10	....	42	1	83	50.60
Fourteenth	..	3	2	....	1	....	1	2	2	23	6	1	41	1	86	47.67
Fifteenth	..	....	....	....	...	....	.	....	..	7	4	2	13	2	38	34.21
Sixteenth	..	4	5	....	1	1	..	1	1	23	8	2	46	4	108	42.59
Seventeenth	..	10	4	1	...	5	1	2	..	71	34	5	133	3	258	51.55
Eighteenth	..	6	1	....	1	....	..	....	..	28	9	3	48	2	116	41.38
Nineteenth	1	9	1	....	1	....	..	2	1	31	60	40	146	5	302	48.34
Twentieth	..	14	5	1	1	....	..	1	..	56	29	6	113	1	212	53.30
Twenty-first	..	2	2	1	...	....	..	1	2	21	18	4	51	11	148	34.46
Twenty-second	..	11	2	2	2	...	..	....	..	37	41	11	106	4	187	56.68
Total	1	86	30	17	10	15	7	28	9	627	336	103	1269	69	2614	48.59

DEATHS FROM ZYMOTIC DISEASES.

NEW YORK.—Deaths from Small-pox, Measles, Scarlatina, Diphtheria, Whooping-cough, Typhoid Fever, Typhus Fever, Cholera, Cholera Infantum, Diarrhœal Maladies, and other Zymotic Diseases.

Registered during the four weeks ending Saturday, Sept. 7th, 1867.

WARDS.	Small-pox.	Measles.	Scarlatina.	Diphtheria.	Croup.	Whooping-cough.	Typhus Fever.	Typhoid Fever.	Cholera.	Cholera Infantum.	Cholera Morbus, and other Diarrhœal Diseases.	Other Zymotic Diseases.	Total Deaths from Zymotic Diseases.	Deaths by Accident or Negligence. (*Coroners' Inquests.*)	Total Deaths from all Causes.	Percentage of Zymotic Deaths on Total Mortality.
First	..	....	....	....	..	....	..	1	....	8	8	1	18	4	39	46.15
Second	..	....	....	....	..	....	..	....	....	....	...	....	......	....	3	......
Third	..	...	....	....	..	....	..	....	....	....	1	1	2	5	13	15.38
Fourth	..	....	....	2	1	1	.	....	....	14	3	1	22	2	66	33.33
Fifth	..	1	....	....	..	1	1	....	....	4	6	5	18	3	47	38.30
Sixth	..	1	....	....	..	....	..	....	....	27	7	5	40	1	72	55.55
Seventh	..	....	....	....	..	3	..	....	....	32	17	2	54	3	126	42.86
Eighth	..	....	....	1	..	....	..	....	....	15	12	2	30	3	79	37.97
Ninth	..	....	....	....	..	....	..	6	....	11	7	1	25	3	83	30.12
Tenth	..	....	....	1	..	....	..	1	....	18	15	4	39	3	91	42.86
Eleventh	..	3	....	2	1	....	1	2	1	26	26	5	67	2	159	42.14
Twelfth	..	6	2	....	..	1	5	4	....	13	24	10	65	4	118	55.09
Thirteenth	..	1	3	2	..	....	..	....	....	19	7	....	32	2	77	41.56
Fourteenth	..	1	....	1	..	....	..	2	....	18	3	1	26	1	66	39.39
Fifteenth	..	....	....	....	..	....	..	1	1	6	6	2	16	1	32	50.00
Sixteenth	..	1	4	....	1	2	..	2	2	21	9	3	45	1	98	45.92
Seventeenth	..	2	7	3	4	3	..	1	1	45	40	4	110	5	237	46.41
Eighteenth	..	2	3	2	1	1	1	1	....	33	14	1	59	2	125	47.29
Nineteenth	..	1	4	1	..	3	2	4	1	48	57	59	180	5	321	56.08
Twentieth	..	2	1	2	..	2	..	1	2	39	26	3	78	2	188	41.49
Twenty-first	..	1	...	1	1	2	..	2	2	23	25	10	67	22	182	36.81
Twenty-second,	..	8	1	....	..	1	..	3	....	30	25	1	69	4	166	41.57
Totals	..	30	25	18	9	20	10	31	10	450	338	121	1,062	78	2,388	44.47

DEATHS FROM ZYMOTIC DISEASES.

NEW YORK.—DEATHS FROM SMALL-POX, MEASLES, SCARLATINA, DIPHTHERIA, WHOOPING-COUGH, TYPHOID FEVER, TYPHUS FEVER, CHOLERA, CHOLERA INFANTUM, DIARRHŒAL MALADIES, AND OTHER ZYMOTIC DISEASES.

Registered during the four weeks ending Saturday, Oct. 5th, 1867.

WARDS.	Small-pox.	Measles.	Scarlatina.	Diphtheria.	Croup.	Whooping-cough.	Typhus Fever.	Typhoid Fever.	Cholera.	Cholera Infantum.	Cholera Morbus and other Diarrhœal Diseases.	Other Zymotic Diseases.	Total Deaths from Zymotic Diseases.	Deaths by Accident or Negligence. (*Coroners' Inquests.*)	Total Deaths from all Causes.	Percentage of Zymotic Deaths on Total Mortality.
First	..	..	....	....	3	....	....	....	1	4	7	1	16	1	44	36.36
Second	..	..	....	....	....	....	....	....	....	1	....	....	1	....	3	33.33
Third	..	..	....	....	....	....	....	....	....	....	....	....	....	1	7	.....
Fourth	..	..	...	1	....	....	....	....	....	6	5	1	13	2	47	27.66
Fifth	..	..	....	....	1	...	1	1	....	7	2	8	20	8	55	36.36
Sixth	..	..	2	....	2	....	1	...	....	5	6	3	19	2	64	29.69
Seventh	..	1	....	....	....	....	....	2	....	14	4	2	23	5	79	29.11
Eighth	..	..	1	....	....	1	....	2	....	13	3	1	21	5	89	23.60
Ninth	..	..	1	2	....	1	....	....	....	7	9	2	22	3	71	30.99
Tenth	..	..	....	....	1	....	....	....	....	6	4	4	15	1	77	19.48
Eleventh	..	2	...	3	....	....	1	....	1	12	13	4	36	5	138	26.09
Twelfth	..	1	....	1	2	1	5	7	1	5	30	14	67	3	135	49.62
Thirteenth	..	..	....	....	1	2	....	....	....	4	6	1	14	3	48	29.17
Fourteenth	..	1	....	....	....	....	....	....	....	5	3	1	10	3	59	16.95
Fifteenth	..	..	....	....	....	2	....	1	....	1	2	1	7	4	43	16.28
Sixteenth	..	..	1	1	1	2	....	1	....	7	2	1	16	3	72	22.22
Seventeenth	1	2	1	2	2	...	1	2	....	26	25	4	66	2	190	34.74
Eighteenth	..	..	....	2	....	....	....	1	....	12	10	1	26	1	98	26.53
Nineteenth	..	..	1	1	1	3	....	2	....	15	49	56	128	3	270	47.41
Twentieth	..	1	....	3	1	2	....	1	2	17	16	4	47	11	146	32.19
Twenty-first	..	..	1	....	1	....	....	3	....	6	20	8	39	16	135	28.89
Twenty-second,	..	..	2	2	1	1	....	3	1	12	15	3	41	2	116	35.34
Totals	1	8	10	18	17	15	9	26	6	185	231	120	647	84	1,986	32.58

Comparison of the Mortuary Records of the Summer Quarter of 1867 *with those of the corresponding period of the previous year.*—There were 2,278 more deaths in New York in the summer quarter of 1866 than in that of 1867. But in Brooklyn the difference was only 510 in favor of the latter. The chief points of difference are shown as follows:

	Total number of deaths in the summer quarter.	Death-rate (annual) in the quarter.	Death-rate by the zymotic causes alone.	Total number of deaths by cholera.	Total number of deaths by cholera infantum.	Total diarrhœal diseases (including cholera).	Total of typhoid fever.	Total by the exanthematous infection.
New York, 1866.......	9,794	54.00	26.80	1,080	1,490	3,933	146	181
New York, 1867.......	7,516	41.39	17.58	25	1,356	2,329	84	267
Brooklyn, 1866........	3,458	....	54.80	517	717	1,570	61	39
Brooklyn, 1867........	2,948	....	....	4	726	992	25	138

Thus it appears that the great decrease, both in the aggregrate of mortality and in that by the zymotic causes, resulted from the absence of cholera as an epidemic, and from some abatement in the diarrhœal disorders and in the amount of typhoid fever. Brooklyn gained less than New York, and that city lost more lives than New York by the diarrhœal and the infectious maladies of children. The local causes of the high death-rate in particular localities in Brooklyn and New York have already been mentioned, but it should here be stated that the remarkably great proportion of infants in the Brooklyn population helps account for its excessive child-mortality and its high death-rate. The fact must be stated that the absence of epidemic cholera the past season scarcely affected the list of deaths by "cholera infantum." The fatal quantity of other diarrhœal disorders—all told—was less than in the summer quarter of 1866 by only 415 in New York and 74 in Brooklyn. And, in the circumstances and localities of the diarrhœal deaths, there appeared ample grounds for dreading the introduction of cholera. The diarrhœal fields would have nurtured that infectious pest if it had gained an undisputed foothold in those localities.

In every portion of both cities, beyond the limits of the diarrhœal fields, the public health was as good as in the rural villages. The average death-rate in all such thoroughly drained, sewered, cleanly, and well-peopled quarters, scarcely reached 17 per 1,000, annual rate; but life and health were not secure in the same sense, as in country hamlets, for not only business and duty, but even the silently-moving air currents, bring the pestilent exhalations of the insalubrious districts so near to multitudes of the well-housed and healthy classes, that many lives are sacrificed to the same detestable moloch of filth-poison that destroys lives by the thousand among the poor.

The boundaries of the small areas which, for convenience, are termed diarrhœal fields, in both cities, remained precisely the same as in 1866, except that in certain flat, low, and undrained sections, the fields were somewhat extended by the excessive saturation of the soil, while in various places, as in the Fourth and Sixth Wards, unprecedented cleanliness and sanitary surveillance greatly contracted the limits of some of the most chronic nests of filthiness and diarrhœal endemics.

BIRTH AND MARRIAGE REGISTRATION.

In the "account current" of human life the numerical record of the *gains* should, year by year, exceed all losses; but unlike the habit of men in commercial affairs, the latter only are faithfully or completely made known to the public, while the nuptial and natal gains to society are ascertained with greatest difficulty. The reasons for this are obvious in our country, where neither ecclesiastical nor civil laws are rigidly enforced, except in matters relating to equity or crime. Unlike the laws concerning registration of births and marriages in European countries, the laws of New York visit upon delinquents and offenders no disabilities, and provide no means of discovering and reporting delinquencies. Ours is a voluntary system of registration. Its degree of completeness, as the existing laws are framed, must depend mainly upon the intelligence and law-abiding spirit of the people, aided by acceptable and efficient methods of procuring the individual returns for registration.

Marriages.—No better evidence of the intelligent moral sense of the metropolitan population can well be furnished than that which appears in the voluntary and very circumstantial registration of the 15,026 persons who were married in the city of New York during the past year. In no other country do clergymen and priests excel those of New York in their respect for the civil laws. Even in Great Britain, where Church and State are united by law and by self-interests, the early efforts at marriage registration, nearly thirty years ago, were not much more successful than the present voluntary system of New York. Yet, both the marriage and birth registrations are incomplete.

The deficiencies of the marriage registration arise from the following causes:

First.—There are some magistrates, and not a few *quasi* clergymen—unsettled "shepherds,"—without any acknowledged relations to the Church of God or to manly duties anywhere, who gain a portion of their daily bread by marriage fees, yet little heed any law, civil or ecclesiastical, concerning the marriages they witness, and fail to certify and return to the proper authorities for public registration.

Second.—There yet remain a few clergymen, some of them known to be scrupulously exact in ordinary duties to society, who still regard marriage as being purely a *sacrament* of the Church, and their office in solemnizing and witnessing the marriage vows as being so exclusively sacramental and ecclesiastical, that were the marriage and their official certificate returned and publicly recorded in the civil registers, the sacrament itself would be profaned. The number of Christian ministers and priests who hold this untenable opinion is rapidly diminishing. The Bishop of the Catholic Church and the Bishops of the Episcopal and the Methodist Churches scrupulously and perfectly respect the existing laws regarding the civil registration of marriages. In New York the several religious denominations render nearly equal obedience to this law; but in Brooklyn there is yet culpable neglect on the part of particular Churches.

Third.—Certain unofficial persons, and not a few who claim to be clergymen, continue the practice of witnessing marriages, and saying unauthorized words of ceremony, at their own residence, and many such marriages not only are unreported, and consequently unregistered, but are unfortunately, for such is the story of clandestine marriage, bigamy, and other kinds of vicious nuptials.

We make no apology for stating these facts in homely phrase. The Marriage Registers in New York and Brooklyn bear the names and nuptial record, almost exclusively, of those only who regard marriage as honorable, and who publicly set their hand and seal to to their marriage vows. The subjoined abstract presents a summary of the chief facts that appear upon the Marriage Registers for the year, and which relate particularly to Vital Statistics. The exactness and completeness of every individual marriage record, as it stands registered in this Bureau, is the fruit of much painstaking in guarding against defects in original returns, and in correspondence with clergymen, magistrates, and families. Having endeavored to secure as great a degree of perfectness as possible in the several branches of registration, I should do injustice to my own sentiments of regard for most excellent aid if I did not mention in this, as in the preceding annual report, that the unceasing attention of Mr. John Bowne, the Chief Clerk in this Bureau, has very essentially contributed to the attainment of the present measure of completeness and excellence which is seen in the public Registers of Marriages and Births in New York.

In Brooklyn the same carefulness is bestowed upon this branch of registration, and the results, as shown upon the public Registers, differ little, except in the degree of deficiency in the total of returns made to the office of registration. This deficiency, in both cities, in the absence of any system either of ecclesiastical or police inquiry into the data and place of each marriage and birth, is to be prevented only by official correspondence with professional persons whose duty it is to make these returns, and by an increased popular intelligence and appreciation in regard to the duty and benefits of the public registration. The Deputy Registrar, Dr. Stiles, in Brooklyn, and Mr. Bowne, in New York, have proved that it is entirely practicable to obtain perfect results in these returns, while, by their constant revision and correspondence, they are steadily overcoming the deficiency of the total number of returns. The subjoined abstracts presents the statistical results of the Marriage Registration the past year, together with an exhibit of the monthly summary for the entire period since the beginning of the year 1866.

Total No. of Persons, each Month, whose Marriage was Publicly Registered.

	1866.												1867.								
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	September.
New York	256	228	229	274	451	523	601	554	604	767	683	612	557	493	517	636	766	727	580	530	645
Brooklyn	{ None registered }				50	109	100	88	111	107	113	97	73	89	101	124	152	140	111	115	127

Abstract of the Registry of Marriages in the city of New York, for the twelve months ending September 30, 1867.

	TOTAL.	COLOR.		NATIVITY.						CONDITION.					
				FOREIGN.		NATIVE.		NOT STATED.		FIRST MARR'GE.		BEFORE MAR'D		NOT STATED.	
		White.	Black.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
October	767	755	12	550	511	209	248	8	8	576	580	123	106	68	81
November	683	670	13	492	472	177	195	14	16	519	517	90	83	74	83
December	612	597	15	427	407	179	203	6	2	478	470	81	80	53	62
Total for quarter ending December, 1866	2,062	2,022	40	1,469	1,390	565	646	28	26	1,573	1,567	294	269	195	226
January	557	545	12	364	335	137	167	56	55	377	382	86	71	94	104
February	493	482	11	334	306	146	171	13	16	375	384	79	60	39	49
March	517	508	9	378	343	124	163	15	11	385	394	82	62	50	61
Total for quarter ending March, 1867	1,567	1,535	32	1,076	984	407	501	84	82	1,137	1,160	247	193	183	214
April	636	618	18	425	405	202	222	9	9	481	467	83	86	72	83
May	766	754	12	568	521	176	220	22	25	593	610	98	69	75	87
June	727	716	11	526	508	187	206	14	13	550	563	102	75	75	89
Total for quarter ending June, 1867	2,129	2,088	41	1,519	1,434	565	648	45	47	1,624	1,640	283	230	222	259
July	580	570	10	400	370	164	195	16	15	449	444	77	69	54	67
August	530	519	11	401	367	122	150	7	13	399	390	63	63	68	77
September	645	638	7	481	433	151	201	13	11	516	516	86	73	43	56
Total for quarter ending September, 1867	1,755	1,727	28	1,282	1,170	437	546	36	39	1,364	1,350	226	205	165	200
Total for the twelve months	7,513	7,372	141	5,346	4,978	1,974	2,341	193	194	5,698	5,717	1,050	897	765	899

Ages of the persons Married in the year.

	Under 20		20 to 25.		25 to 30.		30 to 35.		35 to 40.		40 to 45.		45 to 50.		50 to 55.		55 to 60.		60 to 65.		65 to 70.		70 to 75.		75 to 85.		Not stated.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
October..................	4	111	213	341	257	172	144	70	66	37	31	15	22	3	13	5	6	2	3	1	....	....	....	....	....	....	8	10
November	4	112	210	288	224	146	112	68	59	35	33	10	15	6	8	3	1	....	2	....	....	....	....	....	....	....	15	15
December	8	113	179	258	214	127	112	55	39	23	27	14	14	7	6	3	4	1	2	1	....	...	....	....	....	....	7	10
Total for quarter ending December, 1866.........	16	336	602	887	695	445	368	193	164	95	91	39	51	16	27	11	11	3	7	2	....	....	....	....	....	....	30	35
January..................	4	78	134	221	171	107	85	44	48	20	25	19	14	1	4	....	4	1	4	....	1	....	1	1	....	....	62	65
February	4	77	144	206	173	114	66	50	44	24	19	11	12	1	10	1	7	...	2	....	....	....	2	....	....	....	10	9
March	8	116	131	209	189	95	84	41	41	23	31	15	15	7	4	1	2	....	2	....	2	....	....	....	*1	....	7	10
Total for quarter ending March, 1867	16	271	409	636	533	316	235	135	133	67	75	45	41	9	18	2	13	1	8	....	3	....	3	1	1	....	79	84
April.....................	4	85	188	280	206	140	99	65	63	35	38	15	17	3	8	2	4	1	1	....	1	....	....	....	....	....	7	10
May	7	133	214	336	270	177	146	50	64	35	25	17	14	4	12	5	5	....	2	....	1	....	....	....	....	....	6	9
June......................	10	125	187	302	239	166	140	60	77	28	30	17	19	8	7	3	5	1	3	1	....	....	....	.	....	....	10	16
Total for quarter ending June, 1867..............	21	343	589	918	715	483	385	175	204	98	93	49	50	15	27	10	14	2	6	1	2	....	....	....	....	...	23	35
July	8	110	172	248	206	118	90	53	43	23	22	13	18	5	11	4	1	....	3	....	1	....	....	..	....	....	5	6
August	4	94	151	219	192	112	88	57	34	22	24	8	15	9	10	1	2	....	1	....	4	....	....	....	....	....	5	8
September	5	108	170	298	227	141	117	42	62	30	28	10	13	5	7	....	5	1	2	....	1	...	....	....	....	....	8	10
Total for quarter ending September, 1867.........	17	312	493	765	625	371	295	152	139	75	74	31	46	19	28	5	8	1	6	....	6	....	....	....	....	....	18	24
Total for the twelve months,	70	1262	2093	3206	2568	1615	1283	655	640	335	333	164	188	59	100	28	46	7	27	3	11	....	3	1	1	....	150	178

* Colored man, aged 81 years—3d marriage.

The Marriage-Rate.—The Registrar General of Scotland has very truly remarked that "there is no surer sign of the general prosperity of a country than the increase of the marriage-rate.* This remark was joined with congratulations to the Scottish people upon their unprecedented prosperity in 1865, when fifteen persons in every thousand in Scotland had that year married. This, says the Registrar, is perhaps the highest marriage-rate that ever occurred in Scotland.

From the foregoing abstracts, the fact appear that the public Registers in New York show that in the last twelve months the marriage-rate exceeded twenty persons to the thousand. But, at the same time, it appears that in Brooklyn the *registered* rate is less than half that in New York. Yet we have abundant testimony to prove that the actual marriage-rate is higher in Brooklyn than in New York. In a previous section of this report, we have pointed out the sources of the deficiency in marriage registration. The amount of deficiency of marriage registration in New York can not be known until we ascertain who fails to make returns, and what number is chargeable to each delinquent. But it will be conceded that no great city has ever had recorded upon its marriage registers, in a single year, a greater number of marriages than was registered the past twelve months in New York, unless aided by a system of ante-nuptial registry and marriage license. The Registrar need volunteer no advice in regard to the urgent necessity for additional legal formalities and safeguards in the authorization and public record of marriage. The Legislature of New York long ago undertook, in vain, to provide the safeguard of a registered permission of the banns of matrimony. The over-ruling influence of the great cities, with their enormous pressure of immorality and low regard for the sanctions of marriage, has hitherto prevented the enactment of laws tending to diminish the amount of that improper and sometimes illegal matrimony into which base men entice unsuspecting girls and women, to suffer the shame, wretchedness, and social wreck that are incurred by vicious wedlock. Hundreds of applications for records of alleged vicious marriages have been made at this bureau by broken-hearted wives or weeping parents, who ask in vain for a transcript of the public registry of marriage that has been dishonored. Some who seek the public Registers, under such circumstances, find the record of the illegal or vicious marriage, but they turn in vain to the laws of the State for adequate relief and defence.

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* Annual Report of Dr. Stark to the Registrar General of Scotland, 1866.

In view of facts which are apparent to this Bureau, and confirmed by all clergymen and magistrates who are at all scrupulous in regard to the marriages they celebrate, the question arises whether the time has not come when the most sacred and socially important relation of human life shall, in the State of New York, be as well guarded and as publicly honored as in any other enlightened country. And, as the machinery of Church and State cannot be allied in the enforcement of regulations for marriage registration in our country, there would seem to be a necessity for adopting a system somewhat like that contained in the Code Civil of France: at least so much as relates to the legalization and formalities of the marriage contract previous to ceremonials. Thus every marriage would be recorded, and the legal evidences of every marriage would be preserved with the same care as that of every other civil transaction to which any importance is attached.

BIRTHS.

Perfect returns of 12,569 births in the twelve months have been sent to the Bureau by physicians, parents and midwives, in New York, and 4,878 by those in Brooklyn. This, it is supposed, does not exceed forty per cent. of the number of births which actually occurred in these cities. Hence, until this class of statistics is rendered complete by the registration of every birth, it is needless to attempt any general deductions. The disciples of Malthus may be gratified at the first view of this *apparently* small addition to the crowded and badly-housed population of the metropolis, and the anxious believer in the degeneration of American manhood may, at the same hasty glance, seem to discover that the race is dwindling. But when we turn to the record of the 10,917 infants that died in these two cities in the year 1866, before they had reached their first birthday, and when next we find that of the infants which survived the perils of the first twelve months in that sickly year, 1,354 were destroyed by disease in the first succeeding nine months of their second year of existence, it is plain enough that the total number of children born in these cities every year cannot differ much from the pro rata of births to total population in other great towns. And there is another fact of like nature, which the census of our population reveals. It is this: that 13.08 per cent. of the total number of inhabitants in the city of New York are under five years of age, and that 13.52 per cent. of the total in Brooklyn, are of this age. This is fully equal to the usual pro rata of children of like age in the population of other cities. Indeed the child-ratio in Brooklyn exceeds that of almost any other city.*

The facts are stated here to prevent a misuse of the statistics of birth, which, though perfect in the individual records, are so incomplete in their totality, that they must not be used for deductions regarding the laws of population increase or decrease. There are only two or three large cities in the United States that secure any thing like completeness in the registration of births, and in those it is accomplished mainly by means of special canvassing, aided by long-established methods of public registration.

The subjoined abstract exhibits the most essential facts in the statistics derived from the birth registers of this bureau the past twelve months.

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* The ratio which the total number of children under five years of age bears to the total population in New York, Brooklyn, and several cities and States, is seen in the following table:

Percentage of Child Population (under five years) to Total Population.

City or State.	Total Population.	Percentage of Children Under 5 Years to Total Population.
Brooklyn	296,112	13.52
New York	726,384	13.08
Sate of New York (Census of 1865)	3,827,818	12.28
Wisconsin	775,881	17.70
The six New England States (Census of 1860)	3,135,283	9.60
State of Rhode Island	184,965	10.20
City of Providence	54,595	9.73
London (Census of 1861)	3,037,991	11.92
England (Census of 1851)	20,066,224	13.06
United States (Census of 1860)	31,443,332	15.43

Abstract of the registry of births in the city of New York, in the twelve months ending September 30th, 1867.

MONTH.	Total.	COLOR.			SEX.			*NATIVITY OF PARENTS.					NAME OF CHILD GIVEN AND REGIST'D.	
		White.	Black.	Not stated.	Male.	Female	Not stated.	Foreign.	Native.	Father Foreign (only).	Mother Foreign (only).	Not stated.	Name.	Not given.
October	922	903	19	....	392	530	....	557	193	89	73	10	660	262
November	973	965	8	....	506	464	3	666	165	77	56	9	647	326
December	982	963	19	....	512	468	2	658	189	86	44	5	626	356
Total for quarter ending Dec. '66,	2,877	2,831	46	....	1,410	1,462	5	1,881	547	252	173	24	1,933	944
January	1,115	1,098	17	....	572	543	....	687	221	95	35	70	694	421
February	1,053	1,037	15	1	570	481	2	668	195	82	46	55	686	367
March	1,149	1,135	14	....	579	570	....	743	205	86	42	69	724	425
Total for quarter ending Mar. '67.	3,317	3,270	46	1	1,721	1,594	2	2,098	621	263	123	194	2,104	1,213
April	898	881	17	....	458	440	....	560	167	71	43	51	593	305
May	1,012	1,000	11	1	526	486	....	666	157	107	39	41	696	316
June	1,036	1,024	12	....	557	479	....	644	184	93	49	53	681	355
Total for quarter ending June '67.	2,946	2,905	40	1	1,541	1,405	....	1,870	508	271	131	145	1,970	976
July	1,180	1,173	7	....	595	584	1	764	203	92	52	66	769	411
August	1,147	1,132	15	....	568	579	....	719	212	93	57	61	717	430
September	1,102	1,094	8	....	562	540	....	715	200	79	40	64	712	390
Total for quarter ending Sept. '67.	3,429	3,399	30	....	1,725	1,703	1	2,198	615	264	149	191	2,198	1,231
Total in the twelve months	12,569	12,405	162	2	6,397	6,164	8	8,047	2,291	1,050	576	554	8,205	4,364

* The slight discrepancy with the total, under the head of this column, is occasioned by the twin-births.

In reviewing the foregoing table, the same fact appears in these birth records as in the common experience of all complete records of birth; that the deviation from equality in the total numbers of infants, according to sex, is slightly in favor of the males. In the 12,569 births, there were 233 more boys than girls. This excess of male births conforms to the general physiological fact regarding the relative ratios of sexes to the total number of births.

The next point to be noticed is the fact, that while there were 8,047 children born of foreign parents, and 1,626 other births accredited to parents but one of whom is foreign, there were but 2,291 births registered for native parents.

Until we reach the period when all, or nearly all, the newly-born are duly registered in this bureau, it will not be expedient to draw any final conclusions from the present incomplete numerical results of birth registration. But we may here remark that it is plainly a fact that the offspring of foreign parents are registered with far greater faithfulness than those of native parents, unless we assume that there are vastly more child-bearing women of foreign than of native birth living in wedlock in these cities. It is probable that there are just about as many children born in New York, year by year, of foreign as of native mothers; for the married female population—at child-bearing ages—in New York and Brooklyn, is scarcely half of foreign birth. It is regretted that the census returns do not state how many of the married are of foreign birth. Those returns simply state that, in 1865, there were 131,364 wives in New York, 54,518 in Brooklyn, and that 420,052 out of 1,022,764 (total) inhabitants are of foreign birth. And if the same physiological and social laws of natural increase hold true in these cities that are found true in Boston, Providence, London, and Berlin, then every year there is born one living child to every four women who are living in wedlock. Though this ratio is somewhat too high for the population of New York and Brooklyn, we have good reason for the belief that the yearly ratio of births in the married female population of both these cities is more than one to five, and that the ratio of births to the total female population would be about one to sixteen, if the laws of increase are the same in this metropolis as in the chief cities of Great Britain.

But in the absence of a correct census, and with incomplete public registration of the newly born, we need the more to ascertain the rate of increase, in order that we may devise measures for the registration of every birth, and also guard against erroneous conclusions respecting the law of natural increase of population. The enormous infantine mortality in these cities cannot be correctly interpreted without the aid of the law of increase by births. Now, by appealing to the death records and the census, the former of which are numerically correct, and the latter to be regarded as approximately so, though less than the true number, we reach trustworthy conclusions; *first*, as to the grand total of births in New York in the five years ending with the date of the last census, and *second*, as to the average number of births in each of the first five years in the present decade.

This is the proposition: The total number of children born in the five years, or quinquennial period, from 1860 to 1865, can be estimated in two classes at the beginning of the year 1865, the first class being the total number of children five years old or under then found by the census canvassers to be living; second, the total number of children that, having been born during the five-year period, had died during that quinquenniad. This is the statistical statement:

The Number of Births that Occurred in New York during the Five Years ending 1865, *shown by the Records of Death and the Census of Living Children under Five Years of Age—All having been Born in the Period mentioned.*

Ages of Infants that Died.	Years.					Total.
	1860.	1861.	1862.	1863.	1864.	
Deaths under one year	6,087	6,189	5,720	6,118	6,058	30,172
Deaths from one to two years	....	2,990	2,937	3,461	3,261	12,649
Deaths from two to three years	....	....	1,200	1,602	1,484	4,286
Deaths from three to four years	....	....	....	971	997	1,968
Deaths from four to five years	....	....	....	....	627	627
Yearly totals and the grand total of deaths of the children born in that quinquenniad	6,087	9,179	9,857	12,152	12,427	49,702
Total number of children under five years of age living at the beginning of 1865						95,022
Total number of children (living and dead) that were born during those five years						144,724
Average number of births each year of the quinquenniad						28,944

Further comment upon this subject is needless. These statistics and other means of information prove conclusively that, bad as may be the moral and social condition of the great commercial emporium of the continent, it is not becoming depopulated, nor have all the wives and mothers in New York yielded to the shameful and murderous practices of the abortionist, though a great number of despicable men and women in the city ply that destructive business, and lure many thousands into the hideous crime of child-murder. We must decline to mention here any details relating to this growing and most revolting outrage against woman and against society. The rural towns suffer the same outrages, and, it is to be feared, to almost the same extent as the women of the cities, for it is through seductive advertisements and circulars that this degrading trade in death to maternal virtue and maternal life is carried on. Among the laboring classes in these cities, and wherever society is not declining in common virtues, woman is still honored and reverenced in her divinely appointed character and attributes as wife and mother.

How shall the actual number of Births each year be ascertained and recorded in the Public Registers?—This is a practical question in the Metropolitan District, and the answer that we work out in a successful manner here will serve for every town and city in the State. Experience, and a reasonable knowledge of human nature, can solve the problem. The points which the Registrar respectfully submits upon this subject are, briefly, the following:

1. No merely voluntary system of birth-returns for public registration ever has been successful in any country. And even in the countries and cities where serious penalties and disabilities are visited upon delinquent parents and medical attendants, it nevertheless is found necessary to ascertain the true number and fill up the deficient registry of births, year by year, by some system of house and district canvassing or census for the newly born.*

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* The city of Providence has, for several years, furnished a more perfect example of complete birth-registration than any other city in the United States. The City Registrar and Health Officer perceived that, even in that small and easily governed city, it was wholly impracticable to depend exclusively upon the physicians, midwives, and parents, for complete returns of births. Therefore, under authority of the State, marshals or special canvassers are employed to visit every family in the city twice in each year, to obtain a perfect record of every birth that has occurred, but remained unregistered, during the preceding six months. Birth-registration, in the city of Providence, is a model of completeness.

The statutes of Rhode Island likewise provide for very thorough registration of births in the several towns of the State. Each town clerk is required to collect, once each year, complete records of all the births that have occurred in the town; and for each birth he registers he is paid ten cents by the town authorities. The State of Massachusetts, in 1866, passed an Amendatory Act, providing that the town clerks, or registers especially appointed, shall faithfully *collect* the birth-records from physicians and families, and that the towns and cities shall pay thirty cents for every birth so registered. A previous law

2. The requirement that the parent, the next of kin, the residents of the house, and the physician in attendance, shall each be held legally responsible for the certificate of a birth, will fail to secure complete returns, unless local inquiry is made, at frequent intervals—say semi-annually—to discover and prevent delinquencies.

In view of the importance of birth registration, the Registrar respectfully recommends that henceforth, in the months of May and November, there shall be a proper canvassing of every ward and town in the Metropolitan District, to ascertain and place on record all the births that remain unregistered. The result of such returns will not fail to show how desirable it is to know the numbers and the classes that give the natural increase to the population. The census returns of 1865 state that the total female population in the city of New York, in all conditions of life, between the ages of 20 and 45 years, was 170,120, and in Brooklyn, at the same ages, 66,131. These child-bearing ages of woman, in most countries, give a yearly increase equivalent to 1 child to every 5 females living in this, the maternal period. Whatever the laws of natural increase in the metropolitan population may be, it is quite certain that a perfectly complete registration of all the newly-born is a public duty that will warrant the strict enforcement of the law requiring prompt returns from parents and medical attendants. The means now required for securing complete returns for the registration of all the births in the Metropolitan District are believed to be within the control of the Board of Health; and as there has arisen a general desire among the more intelligent classes throughout the five counties of this district to have the law of

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provided less compensation for the registration. The public records of Marriage and Death are maintained in a similar manner in the two States here mentioned.

The English system of vital registration, which is regarded as the most perfect in Europe, is aided very much by the ecclesiastical authority. The birth-registration is attended with many formalities which would be utterly impracticable in the United States. France, Italy, Austria, and the German States, enforce each of the three branches of vital registration by means of special police authority. And it is worthy of remark that in England, where registration is so well performed, the laws enforcing the public record of births, deaths, and marriages, date back to the time of William the Third (1694, and subsequently), and that heavy penalties and disabilities were, for generations, visited upon delinquents and offenders in regard to this duty. The attempts at vital registration in our American cities and the several States are not yet perfectly successful, but there is no reason why the State of New York should not institute a perfect system of vital records. With the aid of a special canvasser in each town and city, in the Metropolitan District, the system now in operation in New York would bring *complete* results. The same system, by aid of a physician and the town clerk (or a registrar) in every town in the State, could readily be extended to the entire commonwealth.

Birth and Marriage Registration enforced, the Registrar respectfully submits the plans by which this important duty may be successfully performed, in accordance with the provisions of the statutes. [*Section* 13, *chapter* 74, *Laws of* 1866; *and sections* 13, 14, 15, and 16, *Ordinances of the Metropolitan Board of Health*, 1868; *and the Laws of* 1847, *chapter* 152.] The power and the duty both to require and to *obtain*, by collection if need be, a full record of every birth and of every marriage, for public registration by the Bureau of Vital Statistics of this Board, seem plain enough, and only the question of money expenditure for the necessary blank forms, printed instructions, public registers, clerical help, and occasional canvassing, now stand in the way of making the work of Birth and Marriage Registration perfect and complete for every portion of the Metropolitan District.*

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* After centuries of experience and painstaking, the British Government has at last attained complete success in a system of Birth and Marriage Registration; and the key to this success is found to consist in its method of regular local inquiry and watchfulness of these two events in each community, by the aid of reporters or "sub-registrars." Massachusetts and Rhode Island, the two States that have attained the highest measure of completeness yet reached in America, in these two branches of vital registration, have succeeded by means of a well devised system of local inquiry for *official collection* of the records of births and marriages, for the public registration at a central office, in accordance with the laws of those States. The able Registrar and Chief Sanitary Officer of Providence, Dr. Edwin M. Snow (who is also the Superintendent of the State Census of Rhode Island), concisely states the chief points in the plan adopted for securing completeness of birth-returns in his city and State, as follows: In his admirable report upon this subject to the National Sanitary Convention, he says:

"Under this plan for obtaining returns of births, marshals are employed, in Providence, to visit every family in the city, in the months of January and July of each year, and obtain all the necessary information in relation to all the (unregistered) children born during the six months next preceding. These marshals are furnished with the blanks for returns of births, &c., &c." ..."Such, in my opinion," observes this excellent and very experienced statist, "is the only feasible plan for obtaining returns of births in the cities of this country, with any approach to completeness."

Such is the teaching of experience. And, so certain is it that dependence upon a purely voluntary system of birth-returns will inevitably prove abortive, that Dr. Snow and others, who practically understand the matter, predicted the failure of every system in New England that did not provide for the canvassing for, *and collection of* the unregistered birth records; and, in regard to a law which one of the New England States adopted in the year 1859, providing that "parents *shall give notice* to the Clerk of their city or town of the births of their children," he correctly predicted that "not one birth in fifty will ever be recorded under this provision." Yet the authorities of the State here mentioned do now obtain very complete returns, under an amendatory provision of the same law, that directs the *collection* of these returns.

In view of all experience and facts relating to Birth and Marriage Ragistration under a purely voluntary system, it is a matter for congratulation that so fair a degree of success has been attained by this system, under the Metropolitan Board of Health. By those persons who understand this subject, this degree of success is regarded as unprecedented. But this partial success must not deter the Board from enlarging and strengthening its methods for making this branch of its vital registration exhaustively complete.

Vital Statistics in the Metropolitan District previous to the Organization of the present Sanitary System.—Legislation providing for the public registry of deaths and interments in New York dates back to the beginning of the present century. And, as was shown in the same detail in our first annual report to the Board of Health, the total number of deaths recorded in the mortuary register at the time the present Bureau was organized, March 5, 1866, was only 624,596. Of births only 141,348 had been recorded, up to that date; and since that date 24,942 more births have been entered upon the record. Only 47,266 marriages had been recorded; but, since that date, this Bureau has registered 11,243 marriages, or 22,486 persons married. All the registration prior to the organization of the Board of Health conformed closely to the style of the poet's memorial of the unhonored hero who had no other record than that he was

> "Born on such a day, and died on such another."

The first authentic "Bill of Mortality" that was permanently recorded owed its registry and publications to John Pintard, Esq. That mortuary report extended from November 1, 1801, to January 1, 1803—fourteen months. It gave the record of the names of the deceased, the causes of death, and the places of burial. The whole number of deaths was 2,215, of which 1,117 were under twenty years of age. They died of "putrid fever," "flux," "hives," "rash," "fits," "lingering illness," "breaking out," "stoppage," &c., &c.

Mr. Pintard, at that time, urged attention to the public and social consideration that bear upon the registration of births and marriages. But the State provided no general statute to encourage such registration until 1847. Yet no regard whatever was given to that law, and but little to that of 1853.

The method of registration of deaths and burials which Mr. Pintard adopted, under authority of the City Corporation, remained unchanged—a mere entry of name, date and burial place—until, in 1843, Dr. J. H. Griscom, during a brief period of duty as City Inspector, introduced important improvements. But the registration soon relapsed into mere entries, and the records continued to be unavailable for any exact and practical uses. The chief defect in this branch of vital registry consisted in the failure to obtain and analyze the circumstantial records of the mortality by each cause of death. The totality of the deaths at each age and in each season of successive years, continued to show very clearly that the death-rate was not only excessive and gradully increasing, but that the proportion of deaths in infancy far exceeded the ordinary proportion in other cities. The registers also contain the unclassified records of the dates of death, together with the name of the ward and street in which the decedent died. But there existed no classified records of mortality in the public registers previous to the organization of the Bureau of Vital Statistics under the Metropolitan Board.

THE CLASSIFIED CAUSES OF DEATH.

However numerous may be the individual causes of death in a large population, the sanitary officer must deal with them in groups, with particular reference to their ascertained sources, and, especially, with regard to the separate consideration of those causes and groups of causes which are most preventable. It is obvious, however, that several causes may, in certain instances, co-operate in terminating a human life, and that in such instances the sanitary and statistical records should register the death in the group to which the predominant or chief cause belongs, and let the other cause or causes that were in action in the case be registered as co-existing, but subordinate.

It would be convenient and very helpful to the sanitary officer and the statist to have the name which is given to each fatal disease correctly described, or indicate its chief cause, and also state its anatomical and physiological seat, or both, in one definition. But this has never been fully accomplished. Every attempt to do this has led to the formation of interminable lists of pedantic names. Dr. Mason Good's Nosological classification, based upon nice but needless distinctions, filled a volume with its Greek nomenclature, and as to the names, classes and groups contrived by Cullen and others, they were useless for the practical purposes of sanitary science.

It was reserved for the very ablest hygeist and vital statistician to prepare a classification of the common and best-accepted names of diseases with reference to practical uses by health authorities and by statisticians. This work was accomplished by Dr. Wm. Farr, of the English Registrar-General's office. His nomenclature and classes are undergoing improvements by the aid of the Royal College of Physicians, the Army Medical Department, and the sanitary authority of England. And the chief improvement, thus far, consists in simplification and better definition of the names of the causes of death.

In harmony with the spirit of sanitary science and advancing medical knowledge, this Bureau has adopted the nomenclature and definitions which best serve the practical objects of vital statistics and sanitary government.

The one principle which should govern the nomenclature and classifications of the causes of death for all sanitary and statistical purposes, is plainly this, namely, that "the *statistical nosology*, to throw the clearest light upon the health of a nation, should be founded upon the mode in which the diseases affect the population." The Metropolitan Board of Health authorized the affairs of its Bureau of Vital Statistics to be guided by this principle from the beginning, and the medical practitioners of the two cities have cordially sustained the Board in this work.

It is a rule of the Bureau that the causes of death shall be entered upon the public registers in the best-accepted English, or in the invariably recognized Latin names, whatever may be the details given by the physician in his certificate of death, and whatever tongue it may be in which his name of the cause of death is given. The following transcript of the record of a death, correctly gives the method of death registration we have adopted. This, likewise, is the form of official transcript that is furnished for legal and other purposes, in great numbers, bearing the official seal and signature.

METROPOLITAN BOARD OF HEALTH,

BUREAU OF VITAL STATISTICS,

OFFICE, 301 MOTT STREET, NEW YORK,

New York,...................... ....186....

A TRANSCRIPT FROM THE RECORD OF DEATHS IN THE CITY OF NEW YORK.

NAME OF DECEASED.		DATE OF DEATH.
JOHN HOWARD ROWE.		September 3d, 1866.
AGE OF DECEASED.	CONDITION.	BIRTHPLACE.
27 years, 4 mos., 9 days.	Book-keeper. Married.	Dumfries, Scotland.
HOW LONG RESIDENT IN CITY.	FATHER'S BIRTHPLACE.	MOTHER'S BIRTHPLACE.
7 years.	Dumfries, Scotland.	Ayr, Scotland.
PLACE OF DEATH.	CAUSE OF DEATH.	TIME FROM ATTACK 'TILL DEATH.
No. 47 Bond street, 15th ward.	Typhoid Fever (Hemorrhage from Bowels).	23 days (Hem., 3 days).
PLACE OF BURIAL.	UNDERTAKER.	MEDICAL ATTENDANT.
Greenwood Cemetery.	E. H. Senior.	R. S. Smith, M. D.

Official Seal
of the
Board of Health.

A TRUE COPY, ...Registrar.

....Secretary.

The individual records, day by day and week by week, are examined and grouped with special reference to the proper investigation of the nature, quantity, and location of the deaths that have occurred by preventable causes. First, in the grouping, the zymotic diseases are noted, for they usually stand charged with nearly one-fourth of all the deaths, while in the sickly districts and in unhealthful weeks, they claim nearly all the increase in the deaths. Second, in the list of classes and causes, the so-called constitutional diseases are brought into a single view, and the ages, occupations, etc., of the decedents are noted. Third in the list are the local diseases, embracing the chief organic inflammatory and congestive maladies of particular organs. The fourth group contains but few causes and few cases of death, for only the deaths by old age,—simply worn-out machinery of life,—or by some fatal defect or excess of a vital organ,—such as the defective structure of the heart which produces "cyanosis" or "paramenia," a fatal arrest and disturbance of functions in womanhood, &c.,—go to make up this class, which is called developmental. The fifth class, comprising all deaths by violence, contains about sixteen records of death each week in New York, and about three in Brooklyn. Each of the five classes embraces fatal diseases or accidents that were preventable, but it is only in the zymotic group that the greatest part is wholly preventable: this group is an unerring indicator of local and removable sources of insalubrity. Therefore, like the infantile death-rate and the fluctuations in the general death-rate, the quantity, percentage and places of the zymotic mortality are constantly watched. Associated with wet and filthy slums, with every species of neglect in domestic hygiene, and with every form of infectious, contagious and epidemic disease, the zymotic group of lethal results shows what places and circumstances demand the immediate application of sanitary regulations and preventive measures.

Experience has already proved that when we examine, upon a broad scale, the records of the first three great classes of disease, viz: the zymotic, the constitutional and the local—which are charged with more than nine-tenths of all deaths, it is found that the same agencies which reduce and keep down the zymotic diseases, greatly reduce the extent and fatality of the constitutional and the local maladies: illustrations of this principle will be presented in our remarks on the latter. We now notice the fact that the zymotic diseases are the most ready guides to the sources of danger to the public health, and that they are vigilant Sanitary Inspectors, searching out the most active and preventable causes that cripple and abridge the lives of our fellow-men.

Pestilence, epidemics, and all kinds of fatal contagion or infection, can no longer be regarded, as they once were supposed to be, the inexorable foes of human life decreed to afflict mankind, regardless of any efforts which man may put forth to mitigate and prevent their fatal operation. Common sense in the observation of these apparently relentless causes of mortality, long ago pointed out the fact that certain preventable physical circumstances act as localizing conditions of most epidemics; and science has at last succeeded in defining the more important relations and explaining some of the causes of epidemic and geographically localized diseases. And, at the period when, some thirty years ago, the learned hygeist and statist, Dr. Farr, of London, undertook to study and register in one group the epidemic and the communicable diseases, it was found convenient to term the group *zymotici*, because in the mode of their propagation—mostly by a specific incubation of an inhaled, inoculated, or inbred miasm or virus—there was a resemblance to the operation of a *ferment* or *zymosis*. The practical point ascertained concerning these diseases, especially of the sub-group, termed miasmatic, is this, viz: that their fatal prevalence depends greatly upon local filth and foul air; in short, that they are, mainly, filth-diseases.

While science has pressed her inquiries concerning certain of the zymotic diseases so far into the once hidden causes, that hygiene can now grasp the means of preventing some of them, the general result of the inquiries has been the discovery of the fact that the circumstances which produce defilement and putrescence—whether in the domicile, the streets, and the soil where people dwell, and, especially, that defilement which comes by the neglect and accumulation of any kind of excremental and *effete* matters which the living throw off, and most particularly in those diseases that are characterized by some specifically poisonous and infectious excrement, or exhalation, as in cholera and typhus, will breed local pestilences, and, moreover, that, with few exceptions, the local filthiness and neglect which favor the propagation of any one of the zymotic diseases, likewise favor all. Cholera and fevers seek out the same domiciles and streets, and dysentery, cholera infantum, and measles do their most fatal work upon one and the same field.

Recently, by the aid of microscopy and chemistry, it has been shown that some of the worst zymotic maladies are accompanied and, perhaps, caused by minute living organisms that by myriads spring into existence from cryptogamic germs, and infest particular parts of the human body. Thus, the *cylindrotænium*, the minutest and most rapidly propagated of fungus cryptogams, is the vegetative attendant upon cholera, and the marvellous little plant called the *Achorion Schœnlini* is proved to be the propagator of the Favus disease of children, while minute infusorial cells, called *Bacteria*, infest the blood and tissues of the sick with typhoid fever and some other diseases.* And whether the propagating principle of the ferment or zymotic disorders actually resides in these parasitic vegetations of microscopic cell-growths or not, it is some advantage, unquestionably, to know that all these low forms of parasitic and injurious vegetations, so far as we have learned their habits, grow only in foul air or upon some sort of excremental and putrescent matter. By the nice and painstaking study which has been bestowed upon the microscopical parasites, no other practical result than this, in few words, has been reached, viz: that filth and foul air furnish the soil which matures and propagates them.

Air, water and sunlight have always been the chief aids to healthy animal life, and hygiene applies them, in the prevention of zymotic and other diseases, by the terms *ventilation*, *cleansing*, *drainage and flushing*, *drying and light.* The zymotic parasites and all other diseases which are propagated and nurtured in filth and foul air, are prevented by these sanitary agencies. In neglected and crowded quarters of New York and Brooklyn, and, mostly, in the stifled and filthy tenant-houses, where the laboring poor are styed together in festering masses, the zymotic diseases do their most destructive work. The hot-beds of infections and contagions are maintained nowhere else among us. The reeking foulness of the air in these places is the chief cause of the fatal diarrhœal diseases, the fatal congestive and convulsive disorders, and the excessive mortality of infants in the two cities. It is the field in which the zymotic diseases are always predominant. Like the official "Searchers of Nuisances" who are employed by the Officers of Health in London, the zymotic diseases search out, and in a certain way report the foul and unhealthy domicile and localities in the cities, but the report by these zymotic nuisance-searchers is daily made by means of the death-registers.

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* The essential results, and, as shown by MM. Pasteur, Schröder and Monoyer, the essential causes of certain fermentatory processes depend upon the agency of minute cryptogamic organisms.

THE PUBLIC REGISTRATION OF DISEASES AND THE CAUSES OF DEATH.

Mere conjectures and opinions have ceased to constitute the basis of the healing art, and as to sanitary science, it rejects them altogether. The doctrines and practice of hygiene are based upon exact knowledge which scrupulously analyzes the physical facts that relate to the life, health, and surroundings of mankind. They require that numerical statements, and very precise definitions and language shall be employed in its service, especially in all publications of sanitary information and instruction. The medical officer who would both observe and teach how and where to apply preventive measures, investigates with care and accuracy the circumstances and causes of the facts with which he is officially concerned regarding the life and health of the people; and, when he records such facts and events, he will use the most definite words and numerals, instead of such indefinite expressions as were current in medical writings before physiology, chemistry, and hygiene attained their present close approximation to the character of exact sciences.

Indefinite as some of the names of fatal diseases may be, and incomplete as the certified causes of death sometimes are, it still is found practicable to gather up and place permanently on record so many of the essential facts concerning almost every death as are necessary to a just estimate of its chief cause or the preventable agencies concerned in it. The occupation, age, and residence of the persons that die, enter into the sanitary as well as the statistical records of death, and in the investigation of the great truths and sanitary indications that most concern the health of the living, it is necessary to follow back the sanitary history of the sick and the dying, and to acquaint ourselves thoroughly with the local and personal conditions that have caused preventable suffering and mortality. The registrar has occasion to say, in this place, that public gratitude is justly due to the Metropolitan Board of Health for the support and authority it has extended to methods necessary to secure the most beneficial purpose of vital registration, viz., that of *saving life*.

THE DEATH-RATES.

In the daily service of the Bureau of Vital Statistics as a department of public hygiene, it becomes necessary to investigate the causes of death, not only in regard to the accuracy of each individual record, but especially with reference to the rate at which the various causes of death are sweeping the inhabitants into the grave. In this manner the fatal work of the preventable diseases is constantly watched, and the variations and causes of excessive mortality at particular periods of life, or in particular localities are ascertained. This hygienic use of mortality-records has brought numerical statements, and the ratios of mortality or *death-rates* into such common and necessary relations to the sanitary as well as statistical reports of Boards of Health, that we need to make a few explanatory remarks upon the *death-rates*, as exhibited in this and the preceding report of this Bureau.

The total number of deaths that occur in one thousand inhabitants, in a year, is accepted by hygeists and vital statisticians, as the most convenient statement of a death-ratio. By common consent, therefore, a death-rate is understood to be a statement of the number of deaths that occur during one year in one thousand inhabitants. It may be estimated upon any part of a year, and thus such a statement of the annual death-rate in the different months or seasons becomes the most convenient and precise method of comparison of particular months and seasons with each other, and with the average death-rate of the entire year. For example, the ratio of mortality in the thirteen weeks of winter may chance to be equal to twenty-six in one thousand, estimated as a quarter of a year; the spring quarter of the year may chance to have a death-rate equal to only twenty-four in a thousand; in summer the rate may be as forty in a thousand; and in the autumn quarter it may be as thirty-four in a thousand; while in the whole year the average death-rate would be precisely thirty-one in the one thousand inhabitants. It may relate to classes, and any divisions of a population; as, for example, the rate of mortality in each of the sexes, or the total population that is of a particular age, or of a particular nationality, a given occupation, or the whole population of a particular ward or locality. The sanitary officer requires to be constantly informed of the state and fluctuations of the death-rate in many of these particulars. He sometimes needs to watch the death-rate, and the causes that are influencing it, in a particular ward, or in a single block of dwellings; and he always needs to know the infant or child death-rate, because that is a most important indicator of the local causes which influence public health.

The chief object of this kind of inquiry, and exact numerical estimation of the various causes of sickness and mortality, is the discovery and preventive treatment of all that is preventable. Hence we push such inquiries into the several wards and districts of the two cities, as well as in regard to the different periods of life, for, wherever infants perish by thousands in their cradles, and wherever men and women are struck down by preventable disease and death, at the very threshold of useful life, the officer of health is solemnly warned to ascertain why there is such waste of lives, why the people were not protected or warned against such needless calamities, and to find out the limits and the nature of the fatal places where death holds its ghastly sway. By this kind of inquiry and exactness, monstrous wrongs, that would be let exist in full operation against life and health, can be discovered and exposed, so that governments and all classes of inhabitants will bestir themselves for the common welfare.

DEATH-RATE IN THE METROPOLITAN DISTRICT.

The death-rate in the county of New York, in the twelve months ending in September, 1867, was 32.27 in the every thousand inhabitants, the census of 1865 being the basis for stating the total population of the county. But if we accept the popular estimate of the population, namely, that there are 1,000,000 inhabitants, then the actual death-rate would be precisely 23.44 in one thousand. But as the latest census is the only available basis for statistical statements of this kind, we must accept it. Its errors are known to consist chiefly in simple neglect in the house to-house canvassing, and the deficiencies affect all ages and conditions of life similarly.*

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* The fact that there are serious errors and deficiencies of the census returns, and that those errors are probably distributed about equally in the different ages, sexes, wards and other elements of the numerical returns, is well stated by the excellent statist, Dr. F. B. Hough, Superintendent of the last census, in the following extract from a letter he has kindly forwarded to us upon the subject.

* * * * * * * * * * * *

"The New York census of 1865, was embarrassed by apprehensions of a draft or other personal liabilities. Had the draft that impended in March been enforced in June, the census would have been entirely abandoned. An unscrupulous and virulent attack by a partizan press, began at an early period and continued through the whole time of the enumeration, added greatly to these difficulties, and this cause alone did more to impair the fullness of returns from New York city than all other causes combined. No complaints

The death-rate in Brooklyn, in the year ending in September last, was 34.48 in a thousand; or if we accept the common belief that the population of that city is now 390,000, the rate would be 23 in a thousand.

Death-rates in the villages and towns of the Metropolitan District.—The common opinion that the ratio of sickness and mortality is much less in the suburban villages than in the metropolis itself, is not uniformly sustained by facts. Inquiries made in certain villages on Staten Island and in Westchester county, during the past year, show that there are particular sections of these villages that suffer a death-rate scarcely less than that of the Fourth and Sixth Wards of New York. In every such instance we have found defective drainage and local filth. Though these sources of fatal disease are suffered in largest degree by poor, or rather by the industrial classes, who have been prompted by motives of economy and the hopes of health, to seek suburban houses in such places, these unhealthful influences are nevertheless widespread, and destroy much life and health among the more affluent classes.

Typhoid fever, obstinate diarrhœal diseases, and ordinary malaria, persist in afflicting many of the populous rural neighborhoods. Pulmonary consumption is likewise persistently prevalent in the badly-drained districts. It is hoped that at the end of another year the Board of Health will be possessed of accurate statistical returns relating to these diseases, and the total mortality in the chief villages of the Metropolitan District. The amount of

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have been made on account of short returns from other cities, although under the same organization, and under a common difficulty, so far as the recent war could affect results. In many cases in New York city the enumerators were repelled from houses, and all information absolutely refused.

"A great fault in the existing census law, is the wide range of statistical inquiries that it embraces. Everything besides personal statistics should be dropped, and agricultural, manufacturing, and other statistics, not strictly pertaining to a census of population, should be assigned to other agencies for reporting."

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"As to whether it is desirable to adopt the English method by householders' schedules, filled up by the heads of families themselves, we have no experience except in the recent census of the District of Columbia, taken under my direction with the most gratifying success. In any city, with an agency as intelligent and well organized as the Metropolitan Police of the District of Columbia, a complete census might be taken."

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"The New York census failed to obtain satisfactory returns of mortality statistics, because these are of a nature not within the reach of common census agencies. There is nothing short of a system of Vital Registration *in constant use, and under an efficient direction,* that can supply the want."

preventable sickness and mortality in certain suburban neighborhoods is too great to be regarded with indifference. But there is no registration of deaths in any of the towns, and as to the census, it not only throws no light upon the sanitary condition and mortality of any place in the five counties comprised in the District, but in the mere matter of death statistics the census returns are utterly useless. Accurate vital registration of deaths should be immediately adopted in every town in the Sanitary District. The people of the cities, no less than the permanent residents of the suburban villages, have a direct concern in the sanitary welfare of the towns in the district.

The census in 1865 made the following official records of the amount of mortality in the several counties of the district. They illustrate the fact that the census records of death cannot guide us to any just estimation of the amount and nature of the mortality that occurs in these five counties:

Census returns of mortality in the five Counties of the Sanitary District.—Total number of deaths ending June 1st, 1865.

Total number of deaths in the County of New York	6,416
" " " Kings, including Brooklyn	2,543
Total number of deaths in the County of Westchester	969
" " " Queens	523
" " " Richmond	279

It is plain that the death-rates in the several counties, if estimated upon these statements of the total mortality recorded in the census returns, would be wholly incorrect, for in the counties of New York and Kings respectively, only about one-fourth of the total number of deaths found any record in the census. The errors may have been less in rural counties, but the necessities of the public in the conduct of sanitary affairs, require an accurate record of the causes of death should henceforth be kept in every town and village in the district.

The death-rates in the different wards in each city, and in each of the four seasons are shown on the quarterly abstract of the mortality by wards. The death-rates in the two years that ended respectively in December, 1866, and in September, 1867, are shown in the subjoined table. The last quarter of the year 1866 is included in the latter as well as the former period, but for practical purposes this brings two years into fair comparison, as the mortality in these successive autumns of 1866 and 1867 differs little, except in the decrease by a few hundred deaths in the latter.

Summary of the Meteorological Observations in the Fifty-two Weeks ending September 28, 1867; together with Statement of Mortality in New York, by Weeks.

Total Mortality by Weeks.	1866. Week ending	Mean Temperature.	Greatest Range. From — to —	Average Humidity.	Total Rain-fall. Inches.	Mean Pressure of the Atmosphere.
449	October 6	58	38—75	53	.10	30.10
428	do 13	60	50—72	68	.50	30.00
475	do 20	58	50—74	59	.10	30.06
409	do 27	54	38—72	59	.15	30.00
389	Novemb'r 3	52	40—65	61	4.50	29.99
391	do 10	47	30—65	59	.00	30.32
372	do 17	50	40—63	61	1.21	29.87
397	do 24	46	32—61	64	.25	29.75
432	Decemb'r 1	44	24—66	68	1.03	29.97
385	do 8	47	30—56	64	1.00	29.98
433	do 15	27	14—50	47	.00	29.99
378	do 22	29	0—40	64	1.50	30.03
384	do 29	31	17—46	69	.90	29.70
	1867.					
463	January 5	25	14—40	63	.00	30.02
434	do 12	26	18—40	60	.00	29.63
436	do 19	14	3—25	58	1.00	29.76
403	do 26	28	8—38	71	.00	29.68
452	February 2	23	4—47	67	2.80	29.91
414	do 9	41	30—56	75	1.90	29.82
414	do 16	36	16—61	72	.71	30.31
439	do 23	36	22—55	62	1.50	29.98
423	March 2	39	28—55	67	.30	29.96
375	do 9	32	20—43	70	.50	30.10
390	do 16	33	12—56	68	2.50	29.98
433	do 23	30	16—40	58	1.50	29.99
408	do 30	38	30—66	56	.35	29.80
419	April 6	51	40—70	45	.05	29.73
407	do 13	53	38—72	49	.20	29.88
406	do 20	54	40—70	52	1.10	29.95
405	do 27	51	38—66	52	.06	29.88
428	May 4	47	37—64	53	.59	29.90
416	do 11	54	41—70	63	2.81	29.66
385	do 18	59	49—70	55	.22	29.75
361	do 25	57	47—71	63	.83	29.79
393	June 1	67	56—84	59	1.34	29.94
381	do 8	70	50—84	62	1.85	29.90
372	do 15	66	48—84	65	2.14	30.09
339	do 22	70	60—85	65	5.20	30.12
409	do 29	69	56—86	74	1.14	29.98
472	July 6	77	64—93	65	.34	29.88
525	do 13	72	60—88	61	1.35	29.97
582	do 20	68	57—80	61	1.74	30.05
677	do 27	75	58—91	64	1.17	29.82
647	August 3	73	55—90	70	2.82	29 94
708	do 10	75	64—87	78	1.76	30.11
640	do 17	76	65—88	71	2.56	29.91
608	do 24	75	58—90	71	1.52	29.90
579	do 31	70	55—84	62	1.42	30.00
561	Sept. 7	72	60—84	67	.05	30.01
512	do 14	64	50—80	56	.00	30.06
568	do 21	70	46—89	66	.75	30.14
437	do 28	59	43—75	54	.00	30.08

Abstracts showing the Total Mortality, and the Death-rates, in the city of New York, by Classes of Causes, and in the several ages, in two periods of twelve months each.

TWELVE MONTHS ENDING DECEMBER 31ST, 1866.

CAUSES OF DEATH.		Under 1 year.	1–	2–	3–	4–	Total under 5 years.	5–10.	10–15.	15–20.	20–25.	25–30.	30–35.	35–40.	40–45.	45–50.	50–55.	55–60.	60–65.	65–70.	70–75.	75–80.	80–85.	85–90.	90–95.	95–100.	100 and upward.	Total both sexes.	Percentage of each class.
CLASSES.																													
Zymotic ...	M.	1,375	660	285	173	130	2,623	251	95	86	181	201	156	176	158	154	125	103	86	7	21	21	13	2	...	1	..	8,859	33.04
	F.	1,225	620	239	168	127	2,379	250	67	130	224	237	227	176	140	87	99	90	76	60	40	26	18	4	1	1	1		
Constitutional....	M.	756	288	106	47	25	1,222	66	40	90	237	242	214	208	195	161	137	114	84	77	37	21	6	3	...	...	..	6,104	22.76
	F.	596	230	78	35	20	959	65	43	129	249	237	244	242	164	142	115	90	86	75	50	33	20	5	1	1	..		
Local......	M.	1,480	455	167	106	71	2,279	159	66	78	170	204	261	274	261	234	236	185	176	176	109	49	34	9	2	2	..	9,036	33.70
	F.	1,249	377	173	73	58	1,930	144	65	105	175	192	240	189	147	119	161	134	122	130	102	66	32	15	4	2	..		
Developmental ..	M.	564	40	4	4	1	613	8	4	3	5	4	7	6	12	16	5	5	22	24	46	35	48	26	6	2	1	1,877	7.00
	F.	425	32	10	2	2	471	2	2	16	24	19	34	24	9	8	14	9	28	32	56	76	75	42	18	14	6		
Violence...	M.	46	15	13	11	4	89	49	25	28	56	72	88	81	68	38	31	20	29	15	4	3	1	2	...	...	..	939	3.50
	F.	53	5	17	4	5	84	29	11	10	7	11	19	14	15	7	9	5	8	4	4	2	1	...	...	...	..		
Total..	M.	4,221	1,458	575	341	231	6,826	533	230	285	649	723	726	745	694	603	534	427	397	365	217	129	102	42	8	5	1	26,815	.....
	F.	3,548	1,264	517	282	212	5,823	490	188	388	679	696	764	645	475	363	398	328	320	301	252	203	146	66	24	18	7		
Total, both sexes,		7,769	2,722	1,092	623	443	12,649	1,023	418	673	1,328	1,419	1,490	1,390	1,169	966	932	755	727	666	469	332	248	108	32	23	8	......	.....
Percentage on total mortality, by sexes in each period of life....		28.97	10.15	4.07	2.32	1.65	47.17	3.82	1.56	2.51	4.95	5.29	5.56	5.11	4.36	3.60	3.48	2.82	2.67	2.48	1.75	1.24	.92	.40	.12	.08	.03	......	.....

Twelve months ending in September, 1867.

CAUSES OF DEATH.		Under 1 year.	1–	2–	3-	4–	Total under 5 years.	5–10.	10–15.	15–20.	20–25.	25–30.	30–35.	35–40.	40–45.
CLASSES.															
Zymotic	Males.	1,393	677	272	183	168	2,613	186	44	46	94	98	87	87	54
	Females.	1,214	638	270	135	89	2,376	176	35	57	90	91	97	94	59
Constitutional	Males.	625	212	93	35	36	1,621	67	36	71	203	223	206	221	198
	Females.	496	232	65	38	19	850	50	36	107	240	252	229	210	175
Local	Males	1,504	491	178	113	71	2,357	161	71	73	139	156	208	237	217
	Females.	1,163	414	163	80	59	1,879	122	61	61	152	183	174	186	137
Developmental	Males	533	35	....	1	2	571	1	3	2	4	2	5	5	6
	Females.	455	16	7	1	1	480	1	....	13	22	30	30	31	14
Violence	Males.	52	9	11	8	8	88	41	36	32	59	51	57	93	55
	Females	34	10	13	6	6	69	21	8	7	10	18	20	21	9
Total	Males.	4,107	1,454	531	340	215	6,650	459	190	221	499	530	563	651	530
	Females.	3,392	1,310	518	260	174	5,654	370	140	248	514	574	559	572	394
Total of both sexes		7,499	2,761	1,052	600	389	12,304	829	330	472	1,013	1,104	1,113	1,223	924
Percentage on total mortality, by sexes in each period of life		31.99	11.79	4.49	2.56	1.66	52.48	3.54	1.41	2.01	4.32	4.71	4.75	5.22	3.94
Total population at each of these periods of life. (By census of 1865) *	Males.						47,857	46,250	35,715	26,183	26,885	29,505	28,612	27,692	21,525
	Females.						47,163	45,505	36,053	34,928	42,522	40,223	35,325	28,823	23,227
Total both sexes							95,020	91,755	71,768	61,111	69,407	69,728	63,937	56,515	44,752
Death-rate in the 1,000 inhabitants at each age, in the twelve months ending September 30th, 1866 [Estimated upon census returns of the several periods of life]							133.12	11.15	5.82	11.01	17.69	20.37	23.30	24.59	26.12
Death-rate in the 1,000 inhabitants at each age, twelve months ending September 28th, 1867 [Estimated upon census returns of the several periods of life]							129.49	9.03	4.60	9.20	14.59	15.83	17.48	21.61	20.65

* Unknown; Males, 678; Females, 869—Total both sexes, 1,517.

Twelve months ending in September, 1867—Continued.

CAUSES OF DEATH.		45–50.	50–55.	55–60.	60–65.	65–70.	70–75.	75.80.	80–85	85–90.	90–95.	95–100.	100 and upward.	Total both sexes	Perc'ge of each class.
CLASSES.															
Zymotic..................	Males	66	50	52	41	26	24	6	8	5	1	....	......	6,888	20.33
	Females.	50	35	39	29	25	20	14	6	6	1	....	......		
Constitutional	Males.	153	131	88	81	66	30	24	4	2	....	....	......	5,596	23.87
	Females.	136	122	76	80	75	44	29	22	5	....	....	......		
Local	Males.	211	201	161	165	121	98	48	26	9	3	1	......	8,452	36.05
	Females.	121	143	112	130	119	101	52	34	10	4	2	......		
Developmental..............................	Males	4	5	10	12	13	22	27	41	22	4	3	......	1,660	7.08
	Females.	10	4	6	12	24	43	44	60	38	18	11	4		
Violence	Males.	39	22	16	17	15	4	2	2	2	....	....	......	847	3.64
	Females.	3	7	4	5	7	1	1	....	....	....	....	......		
Total	Males	473	409	327	316	241	178	107	84	40	8	4	......	23,443	....
	Females.	320	311	237	256	250	209	140	122	59	23	13	4		
Total of both sexes...................		793	720	564	572	491	387	247	206	99	31	17	4		
Percentage on total mortality, by sexes in each period of life..		3.38	3.07	2.41	2.44	2.09	1.65	1.05	.88	.42	.13	.08	.02		
Total population at each of these periods of life (By census of 1865).*.......................	Males.	21,240	13,534	6,586	6,198	2,779	1,630	748	358	123	45	16	6		
	Females.	14,926	12,587	6,367	6,514	3,097	2,201	1,004	585	191	71	27	13		
Total both sexes..................................		36,166	26,121	12,953	12,712	5,876	3,831	1,752	943	314	116	43	19		
Death-rate in the 1,000 inhabitants at each age, in the twelve months ending Sept. 30th, 1866. [Estimated upon census returns of the several periods of life].....		26.71	35.65	58.29	56.40	113.34	122.42	189.50	262.99	343.95	275.86	530.23	421.05	36.92	
Death-rate in the 1,000 inhabitants at each age, twelve months ending Sept. 28th, 1867. [Estimated upon census returns of the several periods of life].........		21.93	27.56	43.54	44.99	83.56	101.02	140.98	218.45	315 29	267.16	395.35	210.53	32.27	

* Unknown : Males, 678; Females, 869—Total both sexes, 1,547.

Infant Death-Rates.

It will be observed in the foregoing table, that the death-rate of each sex and each quinquennial period of life is given, also the percentage or share which each of the five great groups of causes claimed in the grand total. The census does not state the number of infants living in the cities in each year of the first quinquennial period, but the aggregate number of children under five years of age, as given in the census return, is quite as trustworthy as any other item of the returns. The total number of children under five years of age in the city of New York, according to the census, in the summer of 1865, was 95,020. The total number at the same age now cannot be less than 98,496, or eight-fold as many as died of that age—probably it is more than 100,000. But whatever may be the actual number of infants now living, the fact that 12,312 children under five years of age died during the past twelve months, and that this was more than one-half of the total number of persons that died in the year, is plainly seen in the foregoing table. What proportion of all the young children in New York and Brooklyn perished will be found by dividing the total number of children under the fifth year, that were living in the year, by the number of the dead at this age.

The number of infants in New York that died before their first birth-day was 7,494, and the number in Brooklyn was 3,009. This is believed to be *little less than one-fourth of all the infants born alive in the year;* and this we know is twice too high a death-rate for the first year of infant life. But it is impossible to present this subject in the manner its importance demands until a full return is annually given of the births in each city.

Upon this subject the Registrar would remark that he has good reason to believe that between one-ninth and one-tenth of all the children under five years of age in the metropolis, in any one year, are, in the present state of the people, doomed to die in the course of the year. But if sanitary science is not a fable, and if the principles of physiology and the lessons of experience and of medical observation are not altogether fallacious, then it is true that fully one-half of this child-mortality is preventable by sanitary measures.

It is so important that the Board of Health, as well as the public generally, should neither be misled by, nor become indifferent to, the enormous waste of infant life in the metropolis, that we will here adduce a few facts which may aid in a discriminating interpretation of these high death-rates of the child-population.

First, we would remark, all history shows that, taken in a large way, the laboring classes are by far more prolific in child-bearing than the other classes of society. This fact is apparent in New York and Brooklyn. But another fact also appears to influence this result in regard to the prolific quality of the laboring classes, though the fact we here mention has no relation to the physiological effect of the industrial and the out-door occupations, namely, the excessive fecundity of the classes (married), which are lowest in the social scale, and most improvident and degraded in their domestic life. This holds true, especially in the classes and the districts in which there is much sickness and a high rate of mortality. Without delaying in this place to present the statistical proofs and the physiological causes of this important law of fecundity in low-lived populations—a law that yet has many exceptions—we simply state the fact as it is. It is one of the physical circumstances in the animal and half-brutalized life of the poor classes of the population in cities.

The *second* fact to be noticed concerning the excess of new-born children among the lowest classes is this, namely: that, as a rule, almost without exception, a high death-rate in the nurslings and children under five years of age, in any city or district, is a very unerring index of an excessive death-rate in the adult population of such city or place. That is, if in the Sixth ward of New York we find a high death-rate in children, and if it is vastly higher than that in the children of the Fifteenth ward, then we shall find (as we actually have found) that the death-rate is excessively high in the total number of adult inhabitants of the Sixth, while there is a very low death-rate in the adults in the ward (the Fifteenth) that buries the smallest percentage of its infants. Thus, experience proves that the infant death-rate is a safe index of the general rate of mortality, both in the total population and in the adults of any city or district.

Lastly.—The respective death-rates of infancy, adult life, and of the total population, in cities, wards, and larger districts, give valuable aids for the correct estimation of the state of the public health. And the infantine death-rate is found to be far the most trustworthy and quickly perceptible indicator of the local and other physical influences that affect the public health. The reasons for this are ample, but they need not be presented in this report.

The subjoined table, which is based upon studies of this subject by Dr. W. T. Gairdner, the excellent Health Officer of Glasgow, and upon our own investigations, presents statistical evidence upon the above propositions :

Mean Death-Rates of Total Populations and in the First Two Years of Life, Showing the Variations and Relations of the General with the Infantile Rates. Average results in certain English Cities and Counties.

City or County (IN ENGLAND) Average of seven years' records.	General Death-rate of the total population. (All ages.)	Death-rate of the infants in first year of life.	Ratio of the general Death-rate to the rate in first year of infancy.
Mean in Nine Districts that have a very low death-rate.......	16.24	93.64	1 to 5 3-4
Mean of Eleven Counties having no large cities..............	19.53	147.88	1 to 7 1-2
Mean of Fourteen great Town and City Districts that had high general death-rates	28.99	258.58	1 to 9 1-5
London........................	25.22	206.62	1 to 8 1-5
(IN AMERICA) Ten years' average.			
Berkshire County, Mass. (In a population of 55,120).......	16.25	97.38	1 to 5 9-10
Suffolk County, Mass. (Boston, Chelsea and Winthrop).....	23.33	107.40	1 to 4 4-5
Providence, R. I. (Average of eleven years, and mean population 51,000)	20.70	100.63	1 to 6 1-2
New York city in the year 1866. (Population estimated 900,000 and total births estimated at 30,000)...................	29.77	258.96	1 to 9 5-8

Though the true census of the infantine as well as total population of New York can only be given approximately, the statistical statement in the foregoing table is almost absolutely correct. Excessive infantine death-rates are in each instance associated with the high general death-rate, and at the same time the excess of infant mortality is plainly accompanied by a relative excess in the ratio of the infantile to the general death-rate. The first and second columns of numerals show the first fact, while the latter fact is exhibited in the third or last column, when read in connection with the other numerical statements.

Death-rates in different Wards.—Estimating upon the basis of the census of 1865, the death-rate in New York was 36.92 per 1,000 in 1866, and 32.27 per 1,000 in the twelve months ending in September, 1867. But 3,627 of the 23,443 that died in the latter period were inmates of hospitals and certain other public institutions of the county and of the State, located within the limits of the city. Not a small proportion of the hospital deaths might reasonably be counted out from the city mortality. We need not, however, deal thus with the records, for it is well to recognize in the total results of disease in each ward, as well as in the whole city and district, the share the public hospitals and asylums had in the annual bill of mortality.

In the subjoined abstract is exhibited the annual total of mortality in the respective wards of New York and Brooklyn, together with the leading facts concerning the share which the zymotic diseases had in the loss of life in each ward, also the share the hospitals and other public institutions had in the mortality of particular wards. The columns of death-rates in this table plainly serve a practical object, that could not be attained by the statement of the numerical facts alone. And if the reader will, while examining the table for New York, refer to the graphically-shaded diagram which Mr. Worthen, the Sanitary Engineer, has prepared to show the comparative rates of surface-crowding or density of population in the different sections of this city,* it will be seen that while as a general rule the highest death-rates in wards are found to correspond directly with the degree of density of population, there still are exceptions. The following schedule, showing the rate of population to ground area in the several wards, may properly precede the subjoined abstracts of mortality in wards and by the zymotic causes :

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* See Report of Sanitary Engineer, Appendix "D" of this volume.

Density and Distribution of Population, and the Annual Death-Rate in the Wards.

NEW YORK.

WARDS.	First.	Second.	Third.	Fourth.	Fifth.	Sixth.	Seventh.	Eighth.	Ninth.	Tenth.	Eleventh.	Twelfth.	Thirteenth.	Fourteenth.	Fifteenth.	Sixteenth.	Seventeenth.	Eighteenth.	Nineteenth.	Twentieth.	Twenty-first.	Twenty-second.
Rate of popul'n to the square mile	41,050	9,950	22,447	133,477	69,904	151,954	119,232	103,786	77,004	185,502	196,510	5,195	155,224	155,880	82,490	69,953	153,006	51,197	16,713	91,006	52,255	21,334
No. of square yds. to each person	75 6-10	328 3-10	136 6-10	23 1-10	45 3-10	21	25 6-10	29 4-10	40 5-10	17 2-10	16 1-10	596	19 6-10	19 9-10	37 5-10	44 3-10	20 1-10	60 3-10	185 4-10	34	59	145 1-10
Death-rate in twelve months ending September, 1867......	41.41	37.69	24.35	40.74	24.83	41.26	30.06	31.93	22.67	29.93	28.85	21.69	28.42	29.68	15.52	23.94	28.54	24.49	24.70	26.02	2[illegible].27	27.95

BROOKLYN.

WARDS.	First.	Second.	Third.	Fourth.	Fifth.	Sixth.	Seventh.	Eighth.	Ninth.	Tenth.	Eleventh.	Twelfth.	Thirteenth.	Fourteenth.	Fifteenth.	Sixteenth.	Seventeenth.	Eighteenth.	Nineteenth.	Twentieth.
Rate of population to the square mile	47,138	67,385	44,450	71,913	104,824	62,862	22,178	3,140	5,108	39,271	65,150	37,386	55,597	40,592	36,932	93,765	9,304	2,193	17,138	31,067
No. of square yards to each person ..	64	46	69	43	29	49	140	985	605	77	47	82	55	76	83	32	334	1,431	167	99
Death-rate in twelve months ending September, 1867	21.05	31.16	16.87	23.03	32.60	26.50	23.92	33.98	33.06	24.90	31.24	34.92	21.75	32.41	26.03	31.50		26.93	27.81	20.74

DEATHS FROM ZYMOTIC DISEASES.

NEW YORK.—Deaths from Small-pox, Measles, Scarlatina, Diphthera, Whooping-cough, Typhoid Fever, Typhus Fever, Cholera, Cholera Infantum, Diarrhœal Maladies, and other Zymotic Diseases.

Registered during the twelve months ending Saturday, Sept. 28th, 1867.

WARDS.	Small-pox.	Measles.	Scarlatina.	Diphtheria.	Croup.	Whooping-cough.	Typhus Fever.	Typhoid Fever.	Cholera.	Cholera Infantum.	Dysentery and other Diarrhœal Diseases.	Other Zymotic Diseases.	Total Deaths from Zymotic Diseases.	Deaths by Accident or Negligence. (*Coroner's Inquests.*)	Total Deaths from all Causes.	Total Population (in Wards,) Census of 1865.	Rate of Population to Square Mile. (Census.)	Percentage of Zymotic Deaths on Total Mortality.	Death-Rate per 1,000 Annually of the Population from Zymotic Causes.	Death-Rate per 1,000 annually, exclusive of the Mortality in Public Institutions.	Death-Rate per 1,000 Annually of the Population from all Causes.
First	....	6	4	6	11	3	3	13	9	41	43	19	158	32	400	9,852	41,050	34.35	16.04	41.41	46.69*a*
Second	....	....	2	....	....	....	....	2	....	4	......	3	11	11	45	1,194	9,950	24.44	9.42	37.69	37.69
Third	....	....	3	1	2	....	....	2	....	2	1	2	13	18	82	3,367	22,447	15.85	3.86	24.35	24.35
Fourth	....	28	19	9	10	7	4	5	2	52	24	27	187	23	707	17,352	133,477	26.45	10.76	40.74	40.74
Fifth	....	11	9	5	8	4	5	10	5	35	23	46	161	52	601	18,205	69,904	26.79	8.84	24.83	33.01*b*
Sixth	2	12	46	13	22	2	6	12	22	73	28	36	274	20	829	19,764	151,954	33.05	13.87	41.26	41.96*c*
Seventh	....	24	37	12	26	14	5	15	1	130	45	38	347	48	1,111	36,962	119,232	31.23	9.39	30.06	30.06
Eighth	....	20	21	16	17	7	6	13	4	64	36	30	234	43	961	30,098	103,786	24.35	7.77	31.93	31.93
Ninth	....	9	34	13	14	7	3	31	1	49	46	36	243	34	972	38,504	77,004	25.00	6.23	22.67	25.24*d*
Tenth	....	12	34	15	13	7	3	14	....	59	51	26	234	18	944	31,537	185,512	24.79	7.42	29.93	29.93
Eleventh	2	52	82	35	30	7	18	19	2	116	114	37	514	41	1,710	58,953	196,510	30.06	8.72	28.85	29.00*e*
Twelfth	....	55	34	6	11	4	48	68	2	46	132	133	539	44	1,212	28,259	5,195	44.47	19.07	21 69	42.88*f*
Thirteenth	1	20	35	10	11	9	3	7	....	60	42	21	219	14	750	26,388	155,224	29.20	8.30	28.42	28.42
Fourteenth	....	11	17	11	12	1	9	16	5	54	26	31	193	17	699	23,382	155,880	27.61	8.26	20.68	29.89*g*
Fifteenth	....	4	13	6	2	4	2	6	3	15	15	11	81	21	397	25,572	82,490	20.40	3.17	15.52	15.52
Sixteenth	1	13	40	19	12	7	5	17	6	65	45	41	268	31	1,005	41,972	69,953	26.66	6.39	23.94	23.94
Seventeenth	3	64	107	37	50	17	11	31	3	175	138	68	704	56	2,271	79,563	153,006	31.00	8.85	28.54	28.54
Eighteenth	....	26	60	16	9	15	6	17	1	89	52	16	307	24	1,166	47,613	51,197	26.33	6.45	24.49	24.49

Nineteenth	10	31	42	12	15	8	48	35	3	103	379	273	959	46	2,907	39,945	16,713	32.99	24.01	24.70	72.77*h*
Twentieth	....	28	75	17	16	8	8	28	6	127	108	54	475	48	1,647	61,884	91,006	28.83	7.68	26.02	26.61*i*
Twenty-first	....	7	23	9	14	8	5	17	7	59	100	86	335	152	1,643	38,669	52,255	20.39	8.66	23.27	42.49*j*
Twenty-second	....	29	52	18	22	9	3	30	8	91	127	39	428	35	1,324	47,361	21,334	32.33	9.06	27.95	27.95
Totals	19	462	789	286	327	148	198	408	90	1,509	1,575	1,073	6,884	828	23,443	726,386	43,364	29.36	9.48	27.28	32.27

NOTE.—The deaths in the several Public Institutions are given above. They do not in any instance properly belong to the normal mortality of the wards in which the Institutions are located; and as it is impossible to assign the deceased to the particular wards whence the patients came, the total number of dead in Hospitals and Asylums, in each ward in the year, may be subtracted from the aggregate number of deaths in the ward. The death-rate in the permanent population of each ward is given in the second column, and the death-rate on total population, inclusive of Hospitals and Public Institutions, is given in the last column.

The first ten letters of the alphabet employed at the right hand of ward lines in the above table refer to the mortality in the Hospitals and Asylums. The number of deaths in each, and the total of such mortality in the ward are given.

(*a*) Castle Garden and E. Depot, 31; Fort Columbus, 4; Fort Wood, 10; Battery Barracks Hospital, 7. Total, 52.

(*b*) New York Hospital, 149.

(*c*) City Prison, 14.

(*d*) St. Vincent's Hospital, 99.

(*e*) St. Francis' Hospital, 9.

(*f*) N. Y. Juvenile Asylum, 1; Deaf and Dumb Asylum, 3; Leake and Watts Asylum, 1; Ward's Island, 530; Randall's Island, 39; Bloomingdale Lunatic Asylum, 23; Colored Orphan Asylum, 2. Total, 599.

(*g*) R. C Orphan Asylum, 5.

(*h*) R. C. Orphan Asylum, 2; Old Ladies' Home, 4; Work-house, 8; N. Y. Orphan Asylum, 3; C ty Lunatic Asylum, 122; Alms House, 940; Penitentiary, 9; Small-pox, 12; Charity Hospital, 451; Epileptic and Paralytic Hospital, 16; Total on Blackwell's Island, 1,558. Colored Home Hospital, 94; Nursery and Child's Hospital, 129; St. Luke's Hospital, 130. Total, 1,920.

(*i*) Mount Sinai Hospital, 37.

(*j*) Bellevue Hospital, 743.

Total Deaths in Public Institutions, 3,627.

DEATHS FROM ZYMOTIC DISEASES.

BROOKLYN.—DEATHS FROM SMALL-POX, MEASLES, SCARLATINA, DIPHTHERIA, WHOOPING-COUGH, TYPHOID FEVER, TYPHUS FEVER, CHOLERA, CHOLERA INFANTUM, DIARRHŒAL MALADIES, AND OTHER ZYMOTIC DISEASES.

Registered during the Twelve Months ending Saturday, September 28th, 1867.

WARDS.	Measles.	Scarlatina.	Diphtheria.	Croup.	Whooping-Cough.	Typhus Fever.	Typhoid Fever.	Cholera.	Cholera Infantum.	Cholera Morbus and other Diarrhœal Diseases.	Other Zymotic Diseases.	Total Deaths from Zymotic Diseases.	Deaths by Accident or Negligence. (*Coroners' Inquests.*)	Total Deaths from all Causes.	Total Population (in Wards), Census of 1865.	Rate of Population to the Square Mile (Census of 1865.)	Percentage of Zymotic Deaths on Total Mortality.	Death-rate per 1,000 Annually, of the Population, from Zymotic Deaths.	Death-rate per 1,000 Annually, of the Population, from all Causes.
First	5	8	....	5	1	....	1	....	12	4	3	39	7	129	6,128	47,138	30.23	6.36	21.05
Second	1	12	6	3	1	....	2	3	34	7	3	72	3	273	8,760	67,385	26.37	8.22	31.16
Third	1	6	1	4	4	....	2	1	6	3	5	33	5	150	8,890	44,450	22.00	3.71	16.87
Fourth	6	7	3	8	1	....	4	....	23	9	10	71	3	265	11,506	71,913	26.79	6.17	23.03
Fifth	8	41	7	9	....	....	3	1	54	17	13	153	17	581	17,820	104,824	26.33	8 58	32.60
Sixth	18	20	7	8	11	1	16	2	57	35	16	191	17	700	26,407	62,862	27.29	7.23	26.50
Seventh	10	13	3	6	13	....	8	....	42	19	15	129	3	382	15,968	22,178	33.77	8.07	23.92
Eighth	11	24	8	5	7	....	8	....	32	12	5	112	4	334	9,829	3,140	33.53	11.39	33.98
Ninth	27	25	9	16	14	2	21	....	98	65	21	298	5	775	23,443	5,108	38.45	12.71	33.06
Tenth	12	41	5	21	4	2	16	....	68	35	24	228	17	714	28,668	39,271	31.93	7.95	24.90
Eleventh	11	24	7	7	4	1	16	1	46	23	8	148	19	570	18,242	65,150	25.96	8.11	31.24
Twelfth	7	22	8	7	11	1	3	2	53	20	12	146	24	457	13,085	37,386	31.95	11.14	34.92
Thirteenth	5	14	5	5	6	2	4	....	39	14	17	111	5	387	17,791	55,597	28.68	6.24	21.75
Fourteenth	3	29	7	13	11	1	3	....	39	22	7	135	9	500	15,425	40,592	27.00	8.75	32.41
Fifteenth	....	26	3	9	3	2	10	....	27	11	4	95	9	298	11,449	36,932	31.88	8.29	26.03
Sixteenth	11	20	6	14	9	4	13	....	102	57	14	250	11	768	24,379	93,765	32.55	10.25	31.50
Seventeenth	6	20	....	5	1	....	6	1	23	22	11	95	9	286	10,234	9,304	33.22	9.28	27.95
Eighteenth	1	9	2	6	4	....	2	....	19	6	7	56	5	163	6,053	2,193	34.35	9.25	26.93

Nineteenth	....	7	5	9	3	2	3	....	20	12	5	66	5	224	8,055	17,138	25.00	8.19	27.81
Twentieth	10	10	5	3	1	....	6	....	24	8	7	74	2	280	13,980	31,067	26.43	5.29	20.74
Twenty-first	....	....	....	....	....	....	....	....	......	......	.....	....	......	....	....	....	....	....	....
Twenty-second	....	....	....	....	....	....	....	....	......	......	.....	....	......	....	....	....	....	....	....
Totals	153	378	.97	163	109	18	147	11	818	401	207	2,502	179	8,236	296,112	17,388	30.38	8.45	27.81

NOTES UPON THE ABSTRACTS OF MORTALITY IN WARDS—EXPLANATION OF THE DEATH-RATES, ETC.

In the preceding abstracts is presented an epitome of the hygienic as well as the mortuary records of the forty-two wards of New York and Brooklyn. These records may be read most intelligibly in the following manner :

The Right-hand Column—Death-Rate.—It will be observed that the yearly death-rate differs very widely in different wards ; as, for example, in the First, Sixth and Fifteenth of New York, and the Twelfth, Fifth and Third in Brooklyn, and we mention these three wards in each city in the order of their death-rates, respectively. It will be observed that the ward death-rates differ from each other vastly more than from the average rate in the entire city. Thus we see that the yearly death-rate for the entire city and county of New York is 32.27 in 1,000 inhabitants, and in Brooklyn 27.81 in 1,000 ; but the Fifteenth Ward of New York had a death-rate which is less than one-half that of the average for the entire city ; while the First and Sixth have a death-rate nearly one-third higher than the average rate of the whole city.

Third Column from the Right—Death-rate by Zymotic Causes alone.—In this column there is one fact that should not escape attention, namely, that in the First, Twelfth and Nineteenth Wards the preventable zymotic diseases alone destroyed life at a more rapid rate than all the causes of death combined that were in operation in the Fifteenth Ward in New York; also, that in several of the insalubrious wards in either city, the zymotic diseases alone were nearly as destructive as were all causes combined in the most healthful wards. The share which the public institutions had in the zymotic causes and in the general mortality of particular wards in New York is noted.

Fourth Column from the Right—The Percentage of Zymotic Causes in the total list of Deaths.—Here is presented the fact that wherever the death-rate was low, there, too, even the *proportion* or ratio which the zymotic and preventable diseases bear to the total list of causes of death is diminished in about the same degree that the total in the ward is diminished below the average total of the city. [The 2d and 3d columns, instead of the 3d and 4th, should be consulted in the abstract for Brooklyn.]

The Several Zymotic Diseases.—The thirteen successive columns, numbering from left to right, concisely epitomize the epidemiological records of the year. It will be noticed that scarlatina, measles, diphtheria, typhoid fever and cholera infantum make up the hecatomb of that sacrifice which domestic infections and foul air demand of the inhabitants in these two cities. This record of 6,884 deaths by zymotic diseases in New York, and 2,502 by the same causes in Brooklyn, will be justly regarded by all medical authorities as proof that the fatal pressure of preventable disease is far too great. Twenty-nine and a third per cent. of all the deaths in New York, and more than thirty and a third per cent. of the total mortality in Brooklyn, were caused by this most avoidable class of maladies. The particular localities in which these causes were most active are here indicated by ward divisions only, because it is impracticable, without exhibiting maps of each smaller subdivision, to present the yet wide distinctions that actually exist between the wholly clean and sanitary, and the wholly unclean and unsanitary dwelling areas; such, for example, as the Murray Hill section of the Twenty-first Ward, in New York, contrasted with an equal area and an equal population of the East river side district of the same ward; or in the strongly-contrasted east and west segments of the Sixth Ward of Brooklyn. There remains one most important lesson to be studied in regard to the total quantity of these fatal filth-diseases and infections, in respect of the periods of life in which they are most prevalent. The reader will find the complete statistics relating to this subject by turning to the first pages of the Consolidated Abstracts in the next section of this report, and in the corresponding section of the Brooklyn Abstracts. In the statistics here mentioned, we find that, notwithstanding the absence of cholera the past season, the fatal force and quantity of the zymotic maladies which destroy life in early childhood differed but little from the experience of the previous year. This appears in our experience each year, and it holds true everywhere, and in regard to all zymotic poisons, certain rare epidemics and fevers excepted, that tender infancy, and the children under seven years of age, succumb more quickly and suffer far more fatally than adults exposed to the same zymotic causes; and this is witnessed, not only in regard to the child-pestilences—measles and scarlatina—but quite as much in regard to the local, domestic and dietic causes which produce diarrhœal diseases.

The Deaths in Hospitals and other Public Institutions.—In the foregoing table, we note the fact that 3,627 persons died in hospitals and other public institutions in New York, and that 561 of these deaths occurred in the immigrant institutions which the State has located within the limits of this city. The circumstances under which this class of foreigners, and the still larger number of pauper and penal patients, that die in the institutions located on Ward's and Blackwell's Islands, find admission therein, render it impracticable to accredit these patients to particular wards. But the fact is known that the First, Fourth, Sixth, Seventh, Eighth, Eleventh and Seventeenth Wards send the greater part of all these from their overcrowded dens of misery. Brooklyn, a city of families, and general domesticity, has a far less formidable list of inmates and deaths in asylums and hospitals. Its mortuary record in city and county institutions together amounts to 448 in the year.

The total hospital mortality in New York occurred in a total of institution admissions amounting to nearly 60,000 persons; and in Brooklyn, the hospital mortality occurred in an admitted institution-population of about 7,000 persons. How much greater the number of deaths would have been in the same total of persons, whose very destitution and homeless woes, or degrading vices, made them inmates of the institutions, no one can tell; but, with all the sanitary disadvantages of such aggregation of the needy and the sick, there is nevertheless experienced a vast counterbalancing gain to life and health, both in the city and in the masses of the vicious, poor and the homeless sick, by thus withdrawing these needy classes, and treating them as they are treated. Time, and a progressive view of public and social economy, may eventually give yet wiser methods that shall save more of this kind of life, by avoiding the present system of condensation of these unhealthy and needy masses. Nearly all these masses, and especially those that are under penal control, are of foreign birth, an *effete* residue from the total immigration of 275,000 yearly from all Europe. The effect of these classes upon the metropolitan death-rate should be born in mind by all who consult the vital statistics of population.

It is believed that no other city in the world receives, retains, and charitably provides for so great a quantity, *pro rata*, of the *effete* and dependent classes of foreign countries. The effect of these classes upon the total mortality in New York and Brooklyn is obvious, and, in round numbers, it adds nearly one per thousand to the yearly death-rate in the former city, but less to that of Brooklyn. As to the death-rate of the vicious classes, could the mortuary records of these classes be separately presented, it would appear enormously high in New York; yet to this there is one important exception, namely, in the juvenile reformatories, and the reasons for this are such as to encourage and reward the Directors of all such institutions.

The records of mortality in the several public institutions in the Metropolitan District will be found in a subsequent section of this report in appended statement, No. IV.

Comparative Healthfulness of the several Wards in New York and Brooklyn.

The sanitary topography of the cities of New York and Brooklyn can no longer be defined exclusively by a description of its geological structure, soils and water-courses, yet some of the most destructive diseases in each city plainly tend to become localized where there are certain general defects in the local drainage; this is the chief fact in the sanitary topography of these cities. But there is another class of facts that so obviously relate to the healthfulness of particular blocks, streets and wards, that they do not escape the attention of any intelligent observer. The several local circumstances which most affect the healthfulness and death-rates in the different wards may be enumerated thus:

First, and most importantly, the local drainage and sewerage; thorough cleanliness by means of good sewers and drains, and especially the effectual and deep draining of the soil being essential means of sanitary security, this is a leading circumstance affecting the salubrity of any locality.

Second, and the most widely experienced of any class of unsanitary circumstances, is the defective house accommodation, and defective sanitary provisions in tenant-houses and other dwellings. More than half of the entire population feels the deadly pressure of this class of wants.

Third, and rapidly gaining in importance, is the unsanitary effect of mere concentration and density of population.

These chief evils are largely associated with other and corresponding disadvantages to health in some, if not nearly all the localities where one or more of them chance to exist; and these disadvantages relate to, (1) unsound and unhealthful food articles; (2) gross ignorance; (3) great accumulation of the thriftless and uncleanly classes of inhabitants; and (4) the presence of unhealthfully conducted business. These various conditions are shared so equally in different wards, that we take some note of them, as follows:

The First Ward, New York.—This ward, which, year in and year out, gives the highest death-rate, has become in every part that commerce has not absorbed, an emigrant and water-side lodging house district, in which every place is crowded, from cellar to garret, with filthy and improvident people. But the chief and constant cause of epidemic disease in the ward is filth; filth in the domiciles, with utter lack of ventilation; filth in the streets and gutters; filth in the sewers, which, in a porous soil, that is already supersaturated with the water of the docks and organic putrescence, are, in effect, merely elongated cesspools. It is, therefore, not strange that the inhabitants die of those diarrhœal disorders and other diseases that riot only in filth. This population sends a larger proportion of patients to hospitals beyond the ward than any other district in the city. The child-population, under five years of age, amounts to 13.66 per cent. of the total number of inhabitants of the ward.

The Second and Third Wards.—These wards, now entirely covered with massive commercial warehouses, give only a hotel population and a few denizens of crowded garrets. The death-rates, as shown in preceding abstracts of mortality in wards, do not correctly indicate the degree of salubrity in this district. Those rates show, rather, how badly it fares with the garret and water-side population, whose sanitary wants are domiciliary and personal. These wards are so healthful and well drained and cleansed that cholera took no root in them in 1866, though in the contiguous First, Fourth and Sixth Wards that epidemic did its most destructive work. These two wards have a child-population under five equal to ten per cent. of all.

The Fourth Ward.—The improvements in local drainage and street cleanliness in this ward have begun to redeem it from its ill repute of unhealthfulness. But it yet remains exclusively a district of tenant-houses, most of them excessively overcrowded. Its child-population under five amounts to nearly thirteen per cent. of all.

The Fifth Ward.—Commerce has possession of the elevated portion of this ward; and the population, now crowded into the very centre of the region of the old Lispenard meadows, where the tide flows in the sluggish sewers, suffers an enormous infant mortality, and sends an excessive share of its adult classes to the grave by diarrhœal and tubercular diseases. The child-population under five is 12.29 per cent. of all.

The Sixth Ward.—The sanitary topography of this ward is the worst of any equally large district in the city. From Chatham to Canal street, its centre, is a natural slum of filth, and the degraded population of that district both increase the natural unhealthfulness and are destroyed by it. The porous and excessively moist soil of the ward, and the great defects of the local drainage, make it the worst cholera field in the city. Its overcrowded and unventilated tenements are inveterate fever-nests. Infant mortality is highest in this ward. But the general death-rate in the ward has rapidly diminished since thorough cleansing has been enforced, the past six months. In the lowest and once the foulest, but now the cleanest, quarter of this ward, the "Five Points House of Industry" and the "Mission House," continue to repeat the lesson that "cleanliness is next akin to godliness," for in the past season, as in 1866, neither cholera nor any other disease has gained foothold in those always crowded, but ventilated and cleanly institutions. The "Old Brewery" and "Cow Bay"—the foulest and most hopeless ground of the "Five Points,"—now occupied by these great charities, practically illustrate the doctrine of hygiene. With all the improvements in cleansing of streets and courts, the Sixth Ward still furnishes more fever-nests than any other district of the city. This evil will continue, and will jeopard the whole city, until the back-to-back and wholly unventilated tenant-houses, with their unlighted and unaired bedrooms, are brought under sanitary improvement and regulation. Children under five years of age constitute nearly one-eighth part (12.47) per cent.) of the population.

The Seventh Ward.—This slope of deep porous soil,—once a region of sand-hills.—has a constantly high infantine death-rate, and its chief source of insalubrity is in its tenant-houses, of which it has some of the worst examples the city affords. Its excessive death-rate would be preventable, were there power to reform and permanently regulate the crowded tenements. Birmingham alley, Pelham street, Cherry, Scammel, and Monroe streets, have for many years been hotbeds of fevers and all kinds of child-diseases. The child-population under five is 13.91 per cent. of the whole.

The Eighth and Ninth Wards.—The ground that underlies the compact dwellings in these two wards, is flat and porous, and mostly very moist. It was formerly a region of paludal malaria;

is not yet wholly free from that tendency. Perfect sewerage and cleansing are very essential here, and the varying degrees of healthfulness in the different sections of this district are plainly associated with these local conditions and with classes of tenements and tenants. There are many foul spots and unhealthful rear tenant-houses in each of these wards. The child-population in the Eighth Ward is 11.94 per cent., and in the Ninth it is 11.04 per cent. of the total number of inhabitants.

The Thirteenth, Tenth, Fourteenth, and Fifteenth Wards.—These four wards, densely crowded with dwellings, and containing an aggregate population of about 126,879, occupy a belt of very deep, porous, diluvial ground, having slight descent eastward and westward from the Bowery as an axis. Whatever essential differences exist in the sanitary topography of different sections of the whole belt consist mainly in local sewerage and general cleanliness. The Tenth and Fourteenth Wards occupy the highest grounds, but are not well cleansed. The most elevated section of the Fifteenth, between the Bowery and Broadway, is at once the most uncleanly and unhealthful portion of that ward. Tenant-houses and a vast amount of rear tenantry crowd the entire belt comprising the wards, from the East River to Broadway. The density of the population in that great segment of the belt exceeds 165.559 to the square mile, including streets. That portion of the Fifteenth Ward which is west of Broadway, is populated at the rate of about 82.000 to the square mile; and, in the heart of that portion is situated Washington Square, comprising nine and three-fourths acres, and with its stately trees and thick foliage, covering the ground that in olden times was the Potter's Field or city cemetery. That open space, in the midst of a very dense population, serves the purpose of lungs, to purify and oxygenize the atmosphere of the ward. Tompkins Square, containing ten and a half acres, in the Seventeenth Ward,—presently to be noticed,—is a healthful aid to the dense masses of human life that surround it. Like the Pelasgic grounds, which the Athenians, before the times of Pericles, forbade to be built upon, in the heart of their city, the sanitary history of neighborhoods surrounding such open parks, proves the wisdom of the Pythian oracle that said*—

"Best is Pelasgic empty."

and that even commerce ought not to encroach upon them. Life and health enjoy a special safeguard on the borders of these open and well-kept grounds.

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* Python was the mythological filth-god of fevers. The oracle warned against crowding the Pelasgic grounds with dwellings.

There has recently been a marked improvement in the death-rates of the Tenth and Fourteenth Wards, mainly in regard to diarrhœal diseases and exanthematous infections of children. There is reason to believe that the closing of fourteen slaughtering establishments in these two wards has sensibly aided this improvement in local salubrity.

The child population, under five years of age, in the Tenth Ward, comprises 14.93 per cent. of the total number of inhabitants; and in the Thirteenth Ward, 15.35 per cent.—an almost unexampled proportion; in the Fourteenth, 12.41 per cent.; and, in the Fifteenth Ward, 7.39 per cent.

The Eleventh and Seventeenth Wards.—These contiguous wards differ in their sanitary condition mainly in this, namely, that the Eleventh is most uniformly and densely crowded with population, and is a flat, so nearly at tide-level that its drainage is inferior to that of the Seventeenth Ward. The excessive moisture of the grounds in all that portion of the Seventeenth, north of Tompkins Square and East of Second avenune—an area that was, not long ago, a marshy meadow, like the whole of the Eleventh Ward—is, of all the places in the city, excepting the low ground of the Sixth Ward, the most infected with fatal diarrhœal diseases and the pestilences of childhood.

The child-population, under five years, in the Eleventh Ward, amounting to 16.12 per cent.—an unexampled ratio; that of the Seventeenth Ward is 15.23 per cent. of the total number of inhabitants.

The fifteen wards thus far enumerated, comprising all that are situated south of Fourteenth street, contain, according to the census returns, 57.92 per cent. of all the population of the city. They gave 53.48 per cent. of the total mortality the past twelve months, and 51.30 per cent. of the total in the previous nine months, exclusive of the mortality in all public institutions of the city. Chronic filthiness, overcrowding, and the general neglect of ventilation, was the chief causes of the general unhealthfulness of this commercial district of the city. The exceptions to these unsanitary conditions, and to the generally excessive death-rate have long been noticed in the Fifteenth, and portions of the Seventh, Seventeenth and Ninth Wards. Taken as a whole, the entire area of these fifteen "down-town" wards is naturally favorable to health. The chief causes of any unhealthfulness in this quarter of the city are artificial. But the excessive concentration of a great mass of this population—a population that is solely dependent upon tenant-houses owners and the sanitary authorities for protection against disease from bad ventilation and filthiness—is more destructive of human life in the region here described, than all other preventable causes combined. Indeed, it is the chief source, or an intensifying concomitant, of a great share of the premature deaths that occur among the laboring classes in the city.

The one great exception to the high death-rate is plainly seen, in the Fifteenth Ward, to depend upon general cleanliness, good housing of the inhabitants, competence, and general intelligence. In this ward, and under the circumstances that prevail here, as just mentioned, the average "chance of life" is more than twice as good as in the other three wards that have been described in connection with this favored ward.

However rapidly commerce may encroach upon these fifteen southern wards of the city, the experience in condensed packing of population, and in all that relates to sanitary wants in this older district, will be, and they are already, repeated on both river-sides in the up-town district, north of Fourteenth street.

NORTH OF FOURTEENTH STREET—NEW SECTION OF THE CITY.

Eighteenth and Twenty-first Wards.—The eastern third of each of these wards occupies low land by the East river side that differs from the sanitary topography chiefly in this, that a portion of the very margin of the river, and the grounds that once were sluggish water-courses, yet remain supersaturated with moisture. There are ninety-six blocks of houses (squares) in the Eighteenth Ward, fifty of which are west of the Third avenue, and forty-six of which are east of it. The death-rate in the population east of that avenue is seventy per cent higher than in the total population of the fifty squares that lie between the Third and Sixth avenues, Fourteenth and Twenty-sixth streets. So, likewise, in the Twenty-first Ward, which is contiguous and of the same width on the north of the Eighteenth, the contrast of death-rates in the two segments of the ward described on Third avenue, as the dividing line, is most remarkable; and it is important to notice the great extent and effect of this difference in the degree of healthfulness in the contrasted sections of those wards.

The following facts, which were stated in one of the weekly returns of mortality, serve to illustrate this contrast and give a fair example of the average experience in the year :

> "Upon mapping out the fields in which the excess of mortality has been chiefly concentrated the past three weeks, we find that in the Tenth, Eleventh, the eastern quarter of the Seventeenth, Eighteenth, and Twenty-second, together with the lower sections of the Fourth, Sixth, and Seventh Wards, not only nearly all the total increase of deaths, but that in those regions, with only a moiety of the city population, more than nine-tenths of all the fatal diarrhœal maladies have occurred. The map now submitted shows the latter fact, and the following memorandum shows the course of mortality in certain wards : In the Eighteenth Ward, extending from Sixth avenue to the East river, and from Fourteenth to Twenty-sixth streets, there were thirty nine deaths, thirty-seven of which occurred in the narrow belt east of and including Third avenue. In that narrow tenant-house belt in these two wards, twenty-nine infants died. In the Twenty-first Ward, exclusive of Bellevue Hospital, there were thirty-five deaths, thirty of which occurred in the twenty-eight blocks east of Murray Hill, and only five of which occurred in the seventy blocks lying between Third and Sixth avenues."

No better proof than this need be given of the salubrity of the Murray Hill district, for in the seventy blocks of the Twenty-first Ward that are comprised in that healthful district of the ward, the death-rate is found to be only one-third as great as in the water-side or low-land and tenant-house district that lies contiguous to the hill in the same ward. But there is one subtle source of domestic unhealthfulness, even in the hill district, that is best known to carefully observing family physicians in that locality ; we refer to the *springy moisture of the ground* in various quarters of the hill, and which gives *wet cellars.* This evil is experienced in many of the fine blocks of dwellings, and it is a source of much chronic disease.

The child-population of the Eighteenth Ward is 11.07 per cent. of all, and, in the Twenty-first it amounts to only 10.74 per cent. of the whole number of inhabitants.

The Sixteenth and Twentieth Wards.—These wards, situated directly west of the two last described, have had a high death-rate ever since the work of grading and sewering was commenced. Projecting spurs of the upheaved gneiss rock formerly gave, in this region, a series of irregular ridges interspersed with springs, moist grounds and streamlets; whether there be a defect or not in the artificial drainage of this region, the fact that these wards have a high death-rate, and that all kinds of epidemic diseases have hitherto found a most congenial ground here, is an important one, that probably cannot be accounted for by any peculiarity of the thrifty middle-class population that occupies the greater part of the whole region. Elevated and hilly as the greater part of the Twentieth Ward originally was, it has been one of the most inveterate "cholera fields" in the city during the last three epidemics.

The child-population, under five years of age, in the Sixteenth Ward constitutes 12.06 per cent. of the total, and, in the Twentieth Ward, it is 13.66 of the whole number of inhabitants.

The death-rate for corresponding six months in Sixteenth Ward, in 1866, was	28.53	per cent.
The death-rate for corresponding six months in Sixteenth Ward, in 1867, was	23.94	do
The death-rate for corresponding six months in Twentieth Ward, in 1866, was	32.11	do
The death-rate for corresponding six months in Twentieth Ward, in 1867, was	26.61	do

In these wards every kind of sanitary improvement, and especially that which gives cleanliness and drainage, tells very decidedly upon the death-rate, and this gain is mainly in the list of diarrhœal diseases and the exanthematous fevers of childhood. The child-population of these two wards is thirteen per cent. of the total.

The Nineteenth and Twenty-Second Wards.—These wards, while undergoing their rapid transition from rocky ridges and tortuous water-courses, possess peculiarities of sanitary topography, as well as of population, that would render the discriptions which may be given this year quite inapplicable in some future time. Divided by the Central Park, each ward in its inhabited section, being bounded on one side by that immense area (1,005 acres) of perfectly-drained and healthful grounds, and, on the other side, by one or the other of the great rivers, these wards will be rendered unhealthful only by defective drainage, or by some kind of human defilement and neglect in and about the dwellings and grounds of the inhabitants. Unfortunately, these sources of needless sickness and death are profusely scattered throughout each of those most elevated and picturesque districts. Nowhere, beyond lower Washington street in the Fifth Ward, and the Five Points in the Sixth, is there to be found such stagnant and reeking filthiness as exists in the shanty-villages near the Central Park. The death-rate in those foul quarters is fearfully high. Nearly one-tenth of the entire population of the largest collection—numbering more than one hundred—of those wretched huts perished in the year 1866, and the same place and the neighborhood, in the south-western quarter of the Twenty-second Ward, gave to that ward the high death-rate we have found there the past twelve months. Except for these foul spots, and several undrained areas, both of these wards would be the most salubrious in the city.

Some gain has been made in the healthfulness of each of the wards the past year, as will be seen in the following statement of the death-rates in 1866 and 1867:

Death-rate in the Twenty-second Ward in the half-year ending Oct. 1, 1867	48.03	in 1,000
do do Twelve months ending Oct. 1, 1867	27.95	do
Death-rate in the Nineteenth Ward in the six months ending Oct. 1, 1866	116.08	do
do do Twelve months ending Oct. 1, 1867	72.70	do

Blackwell's Island, with an average population of about 5,000 persons, gives nearly half the total mortality of the Nineteenth Ward, and by substracting that quantity from the whole, we find that the death-rate in the city portion of that ward was only 23.27 per 1,000 the past twelve months, and 34 per 1,000 the preceding six mouths in 1866.

The child-population in the Nineteenth Ward is 12.46 per cent.

of the total, and, in the Twenty-second Ward, it is 14.30 per cent. of the whole number of inhabitants.

The Twelfth Ward.—In this ward, yet almost wholly rural in character, there are three localities in which concentrated populations are yearly suffering a high death-rate from preventable causes. The first is in a certain quarter of Manhattanville, and Lawrence street, and the line of the "old canal," extending along the low land, eastward from One Hundred and Twenty-fifth street and Tenth avenue, across to One Hundred and Seventeenth street and Harlem Flats. This is the most insalubrious district in the Twelfth Ward, and it extends to another unhealthful quarter in Harlem. Paludal malaria, diarrhœal diseases, and consumption are rife in this unhealthful belt, which extends from river to river, and is nearly at tide-level. Nearly 2,500 of the poor people here dwell in shanties and other temporary huts; and they are every year vexed by malarial fevers and fatal diarrhœas. The third point at which there are special reasons for a higher death-rate, is the hospital and asylum population of Ward's and Randall's Islands. The 530 deaths on Ward's Island were equal to all mortality, out of public institutions, in the ward.

Exclusive of all the public institutions, this ward had a death-rate equal only to 21.69 per 1,000 inhabitants; and, if we exclude the undrained lowland quarter, the death-rate is found to be the lowest of any district in the city. The child-population, under five years of age, amounts to only 12 per cent. of the whole number of inhabitants.

While thus passing in review the leading points that particularly influence the healthfulness of the different wards, we have purposely omitted to give any statistics of nationalities and social conditions of the inhabitants. But the fact needs to be borne in mind, that these latter points hold important relations to the rates of mortality. Moreover, the specially fatal results of bad housing, bad food articles, and domestic and personal uncleanliness,—all four of which conditions of personal unhealthfulness are almost invariable concomitants in New York,—have not been brought into this sketch; for the object has been here to make a plain statement of the local and localizing conditions that affect the general healthfulness of the several wards.

We respectfully refer the Board of Health to the very clear and instructive statement which Deputy Registrar, Dr. Stiles, has made upon this subject, concerning the different wards in Brooklyn, in his report herewith submitted. We would invite particular attention to that officer's remarks concerning the fevers and increased death-rate in certain open and naturally salubrious districts, in which the grounds were extensively upturned in works of improvement and drainage during the summer. Though the peril to health and life was really very great from the causes he mentions in the Ninth Ward, the causes will be greatly diminished, or altogether overcome, when the drainage of that beautiful region is perfected. Attention is also invited to the points he submits regarding the insalubrity of a portion of the Fifth Ward in that city.

Concerning the condition and influence of the fluctuating degree of ground-moisture, or what is popularly termed the "ground-water," in the soil of these two cities, as regards any of the epidemic or localized diseases which have prevailed the past year, we need only remark that systematic observations have been commenced, and that conclusive generalizations can well be based upon the observations in a single year. But this subject is of great practical importance; for it relates to physical facts that may ere long unvail some of the most subtle mysteries of various kinds of epidemic disease. Some practical points relating to this subject and *sanitary drainage*, will be noticed in subsequent pages, in connection with statements concerning typhoid fever, cholera, and phthisis.

Note upon the Consolidated Abstract of the individual and classified Causes of Death [next Abstract.]—The sanitary history of the successive quarters of the year and the various records contained in the preceding pages, present all the general and explanatory statements that appear necessary for a correct and comprehensive view of the local and preventable causes of sickness and premature death. But it is desirable to take a close and very exact view of each individual disease and event that stands charged with having caused death during the year; also to notice with particularity the ages and social condition of the decedents, and show what share each cause and class of causes, and each age and sex had in the Bill of Mortality. The Consolidated Abstract, as given in the tables next following, presents these statements in a statistical form.

As to the statistics themselves, they seem to need no explanation or comment. The reader who carefully examines each item in this record may draw his own conclusions, for he has already seen in what localities and amidst what environment of preventable conditions, and by what fluctuating and destructive forces Life is sacrificed in tender infancy, and at every stage, from the cradle to the ripe vigor of maturity. But no statement that can be made concerning zymotic diseases and epidemics, and no charts or statistics, can show the extent and quantity of preventable sickness and mortality; for, not only is it generally true that the same local conditions which nurture and propagate the zymotic maladies, also increase the quantity of constitutional and acute organic disease, but that no small portion of the deaths by accident and violence, and by various causes that are commonly regarded as *inevitable*, and mainly owing to avoidable causes.

Following the Consolidated Abstract there will be found a few remarks upon the chief cause of Death, and they will more fully illustrate the methods and extent of the avoidable violence that is done to human life in New York and Brooklyn. Every close observer of the follies, the ignorance, indolence, apathy and vices of mankind, will find in these records of death and disease much corroborative evidence that Nature's retributions *against* the violation of her laws are as inevitable as the grave. And thus the study of the causes and circumstances of death becomes a study of the means for increasing the sum of life and health.

The subject need not be treated exclusively in a statistical way, though we deal only with exact statements. Let us drop, for a moment, the phraseology of statistics and sanitary science, while we glance across the whole field that is comprehended within the tabular statements that next follow. The journey of life, as exhibited in these yearly records of mortality, is—in more than half that are born—plainly a failure. Like the bridge described by Addison in the "*Vision of Mirzah*,"* the first five "arches,"

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*What Addison has most eloquently described in the "*Vision of Mirzah*," may be read and seen as a complete reality in those yearly records of Death in great cities.

"The valley that thou seest," said the genius, to Mirzah, "is the valley of misery, and the tide of water that thou seest is the great tide of eternity. * * * Examine now, said he, this sea that is bounded with darkness at both ends, and tell me what thou discoverest in it. I see a bridge, said I, standing in the midst of the tide. The bridge thou seest, said the genius, is human life; consider it attentively. * * * * I found it consisted of three-score and ten arches, with several broken arches. * * * * I see a multitude of people passing over it, * * * * and a black cloud hanging on each end of it. As I looked more attentively, I saw several of the passengers dropping through the bridge, into the great tide that flowed underneath it; and, upon further examination, perceived there were innumerable trap-doors, that lay concealed in the or years of human life, in these cities, are beset with "trap-doors" and "pit-falls," which renders the journey so perilous that more than two out of three of all the children born, complete their first five years of existence.

The relative chances of successfully journeying on through life are manifestly very fair in the first decade after passing the fifth birthday.

In the last summary in the abstract now following, and also in that we presented on page 208, the rate of mortality in the number of inhabitants at each period of life is stated. By referring to these tables it will be seen that not only do infants perish in vast numbers, but that men and women are cut off at the very threshold of useful life. In every 100 deaths that occur in these cities, 43 of them are infants that have not reached their second birthday, and nearly 53 children who have not reached the fifth year of age, are also counted in every 100 deaths. It is also true that 19 of the 100 deaths occur in persons between twenty and forty years of age; and, by examining the record of fatal causes, we find that no small proportion of those who died at the latter ages, —when life possesses greatest value to society,—were cut off by preventable diseases. The zymotic, the constitutional, and the inflammatory classes of disease each give a large share of the avoidable causes of death in the adult ages. The precise number that died of each particular form of disease in each successive period of life will be found on referring to the Consolidated Abstract following. The respective death-rates in the successive periods of life are found in the table of Comparative Death-rates already presented.

At this point let us refer to both of the abstracts above mentioned, and there ascertain the kind of gain has been made in the saving of life at particular ages during the year. We note the following facts:

First.—In the infant population under two years of age scarcely any gain resulted in the nine months that are under comparison. It is true, however, that there were 270 less deaths of infants under one year in the last nine months. All this gain was under the head of the diarrhœal diseases of infancy.

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bridge, which the passengers no sooner stood upon but they fell through them into the tide, and immediately disappeared."

Second.—The total number of deaths in children and infants under five years of age in the past twelve months shows a gain of 345. These were all saved in the nine months preceding last October, over the corresponding period of the year 1866, and the diminution in the death-rate in the child-population of New York is expressed by the ratio of 129.49 to 133.12, which were the child death-rates in the two years respectively. This was gained to the child-population, notwithstanding the adversity of epidemic scarlatina and measles. Facts well known to the Sanitary Inspectors would warrant the conclusion that this gain is justly attributed to increased cleanliness and domestic improvement.

Third.—Those classes of the child population between the fifth and tenth years, tenth and fifteenth, and the fifteenth and twentieth years of age, gained less than the adult population, yet there was a gain of 483 lives for these three quinquennial periods of youth, in the first nine months of 1867, compared with the first nine months of 1866. This occurred in a total population of youth amounting to about 230,000. [By census of 1865 there were 224,634 in New York, between the ages of five and twenty years.]

Fourth.—The highest ratio of gain to life at the different ages was experienced in the advanced periods just past active manhood, but the greatest total gain in numbers, for there is but a small population at the septuagenarian and older years, was in the period of most useful life, between the ages of thirty and thirty-five years, when human responsibilities, obligations, and labors are most important. In this five years period, the gain of the last nine months over the corresponding months of the previous year was no less than 377. This was in a total population of about 70,000. [The census gave 63,937.]

In the period of life between the ages of twenty-five and thirty years the gain amounted to 315 lives. And in the next previous period, namely, between the ages of twenty and twenty-five years, 315 lives were saved.

The amount of mortality, the share each disease had in it, and the extent to which each of the two sexes felt the fatal causes, are carefully stated in the tabular abstracts; but in order to show in a more graphic manner the facts relating to the relative mortality, at the different ages, the annexed diagram is presented.

Explanation of the Diagram to Illustrate the Distribution of the Population and the Yearly Mortality in New York, by Ages.

The statistical relations, and the actual state of the population in regard to the distribution of both the living and the dead, according to the different ages, may be very accurately presented by outline diagrams representing magnitudes that exactly correspond with the respective statistical quantities. The several problems to be considered may be stated as follows:

1. To exhibit, by a columnar diagram, the relative quantities of population (according to census returns) in the city of New York, in each of the quinquennial, or five-year periods of life, under 80 years of age; and, by a final column, at the right side of the diagram, to exhibit the relative quantity of the population that is upward of 80 *years of age.* Also, by a distinct column, placed at the left side of the last seventeen columns, to exhibit the ratio which the total quantity of infant life, *under one year of age*, bears to the number of persons living in each of the seventeen periods just mentioned. (The method of estimation for obtaining the true number of the infant population is partly given on page 79.)

2. To exhibit the relative quantities of the population, at each age, that are cut off by death, the exact proportion of the dead to the living is expressed by the blackened tops of the columns. This is a correct expresssion of the *chance of life* during the year 1867, in each of the eighteen classes (ages) into which the total population is divided.

3. To present, at one view, by means of a subdivided rectangular area, the exact ratios which the number of deaths in each of the eighteen periods, or age classes, of the population, bears to the deaths in each other period, and to the total quantity of mortality at all ages, a subdivided parallelogram is constructed, and placed at the base of the chart, as seen on the opposite page.

Remark.—The fact cannot fail to be observed that the columnar diagram exhibits evidence of a considerable decrease in the number of persons living in the city between five and fifteen years of age; and further, that the decrease must have commenced very close upon the tenth year, and must have continued at least two or three years past the fifteenth year of age. This is plainly seen by inspecting the third, fourth, and fifth columns from the left-hand side. In like manner, by inspecting the three next succeeding columns, viz, those for the fifth, sixth, and seventh quinquennial periods of life—observing the losses by death in these ages—the fact will be apparent that the undiminished fullness of these three columns—the periods of life extending from the twentieth to the thirty-fifth years of age—must have been produced by immigration to the city by people at those ages. The fact is equally apparent that, in earlier ages—viz, from 8 to 17 years of age—there must have been migration of children from the city. All this is strictly in accordance with the records of movement in our city population. The benevolent agencies of that kind which the Five Points House of Industry, the Children's Aid Society, the Home for the Friendless, and the Juvenile Reformatories generally, represent, do, in the aggregate, together with the agency of educational institutions beyond the city, transfer about 6,000 children, at those ages, from the city to the country every year.* In regard to the immigration to the city by persons in the first twenty years of adult life, no remark is necessary, for it is in that halcyon period of human existence that fortune, pleasure, and business occupations of every kind, draw greatest numbers to the metropolis.

The census of the *dead* for the year is correctly shown in the subdivided parallelogram at the foot of this chart. The census of the *living*, as returned by the census marshals in 1865, is stated as follows:

Under 5 years of age	95,020
From 5 to 10 years of age	91,755
From 10 to 15 years of age	71,768
From 15 to 20 do	61,111
From 20 to 25 do	69,407
From 25 to 30 do	69,728
From 30 to 35 do	63,937
From 35 to 40 do	56,515
From 40 to 45 do	44,752
From 45 to 50 do	36,166
From 50 to 55 do	26,121
From 55 to 60 do	12,953

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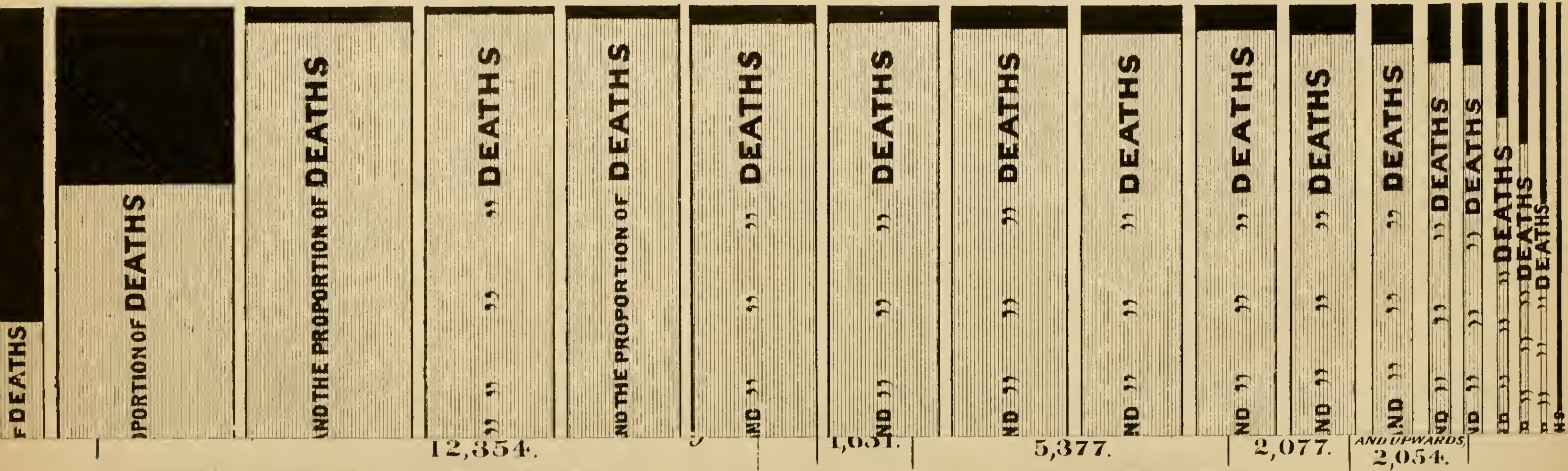
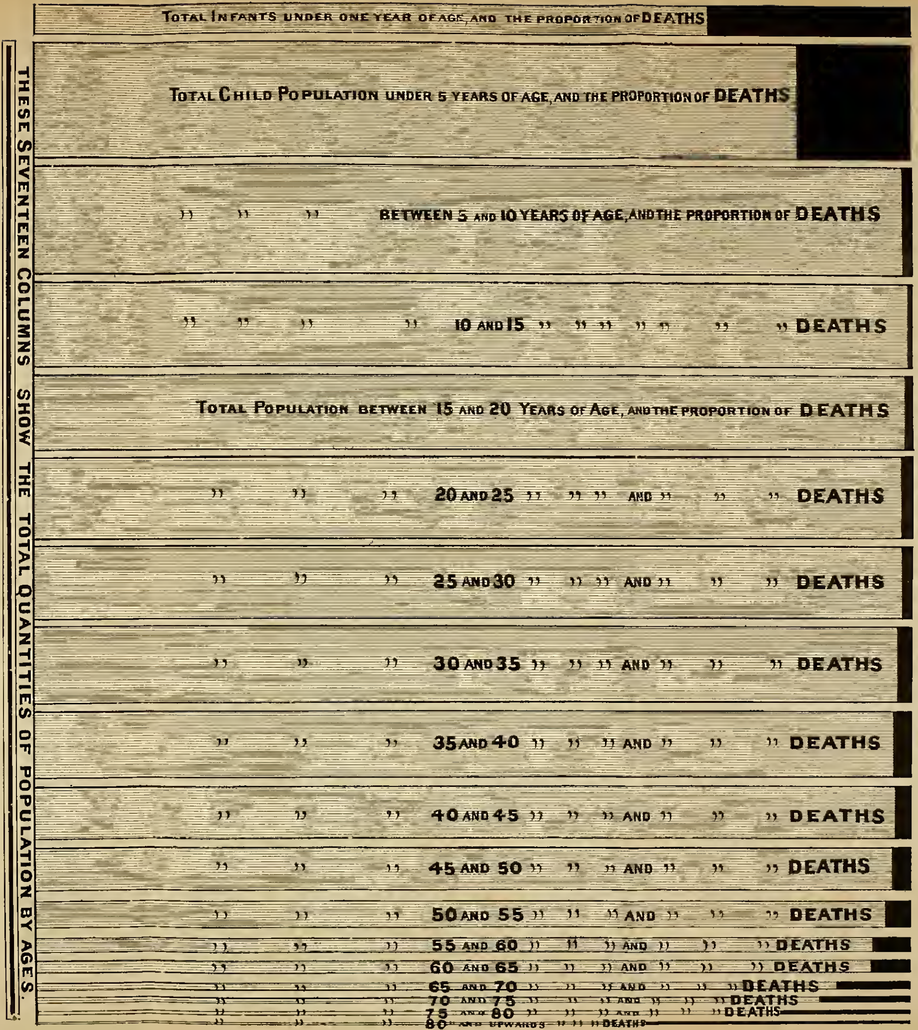
* The "Children's Aid Society," as we are informed by its founder and General Secretary, C. L. Brace, Esq., "transfers every year to the country about *two thousand* children, generally between ten and fifteen years of age."

THIS DIAGRAM OF COLUMNS SHOWS THE RATIO OF DEATHS TO TOTAL LIVING POPULATION AT THE SEVERAL AGES. — IT ALSO EXHIBITS IN SUCCESSIVE COLUMNS THE *RELATIVE QUANTITIES* OF POPULATION AT DIFFERENT AGES (IN THE CITY OF NEW YORK) THE BLACKENED TOP OF EACH COLUMN SHOWS THE MORTALITY: THE LIGHT PORTION SHOWS THE RELATIVE NUMBER LIVING.

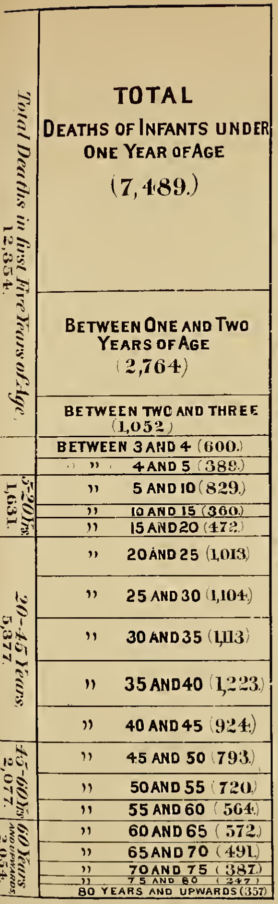


PREPARED UNDER DIRECTION OF THE REGISTRAR OF VITAL STATISTICS, TO ACCOMPANY HIS ANNUAL REPORT FOR 1867

This Diagram of Columns shows the Ratio of Deaths to Total Living Population at the several Ages. — It also exhibits in successive columns the *Relative Quantities* of Population at different Ages (in the City of New York) The blackened top of each column shows the Mortality: The light portion shows the relative number living.



This parallelogram is so divided as to exhibit the *Relative Mortality* at the different Ages.



Prepared under direction of the Registrar of Vital Statistics, to accompany his annual report for 1867

From 60 to 65 years of age	12,712
From 65 to 70 do	5,876
From 70 to 75 do	3,831
From 75 to 80 do	1,752
Eighty years of age and upwards	1,435

The bureau is indebted to Dr. F. J. Randall for the preparation of this and every other diagram that appears in the present and the previous year's report. He has wrought each of them from our written specifications and rough outlines.

n solidated Abstracts of Deaths in New York, from all causes, registered for the twelve months ending Sept., 1867.

CAUSES OF DEATH.	MALES.																													
	NATIVITY.																													
	United States.	Foreign.	Colored.	Under 1 year.	1–	2–	3–	4–	Total under 5 years.	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100 and upward.	Total Males.
CLASS I.—ZYMOTIC DISEASES.																														
ORDER 1. (MIASMATIC DISEASES.)																														
Small-pox	6	6	...	5	....	....	1	1	7	....	..	..	3	..	1	..	1	..	..	..	.	..	..	..	..	..	..	..	....	12
Varicella	2	....	1	2	....	....	....	....	2	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	......	2
Measles	231	21	7	57	107	36	24	6	230	19	2	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	.	..	......	252
Scarlatina	387	27	1	32	66	93	89	44	324	78	4	3	2	1	1	1	..	.	..	..	..	..	..	..	..	..	..	..	.... .	414
Diphtheria	126	19	1	32	34	24	22	11	123	11	1	..	..	3	1	..	..	1	1	2	1	..	1	..	..	..	..	..	......	145
Quinsy (Tonsilitis,) &c.	5	....	....	1	2	1	....	1	5	...	..	..	..	..	..	..	..	..	..	.	..	..	..	..	..	..	..	..	......	5
Croup	162	9	....	42	53	30	18	18	161	9	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	......	171
Whooping-cough	58	1	....	34	16	7	1	1	59	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	......	59
Typhus Fever	41	81	2	1	5	....	3	1	10	9	8	7	17	19	6	8	7	8	8	4	7	2	1	..	1	..	..	..	......	122
Typhoid Fever	91	110	5	1	7	10	3	6	27	21	10	12	29	14	17	16	10	10	6	12	3	8	3	..	2	1	..	..	......	201
Erysipelas	42	20	1	17	5	2	....	....	24	7	2	..	1	4	1	2	2	3	4	5	2	1	2	1	..	..	1	..	......	62
Carbuncle	1	....	....	....	....	....	....	....	....	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	.	.....	1
Dysentery	167	94	2	95	41	8	6	7	157	10	2	4	12	11	11	11	13	7	5	2	5	2	6	2	..	1	..	..	......	261
Diarrhœa	418	117	3	301	100	12	3	2	418	6	2	3	7	9	14	7	5	10	7	15	11	8	7	1	3	2	..	..	......	535
Cholera (Asiatic)	11	22	....	1	....	1	1	....	3	3	1	2	3	8	2	4	1	4	..	1	1	..	..	..	..	.	..	..	.....	33
Cholera Morbus	12	21	....	2	2	....	....	3	7	1	1	..	3	..	3	2	..	4	4	3	3	1	1	..	..	..	..		......	33
Cholera Infantum	763	22	6	535	224	16	5	2	782	2	1	..	..		..	..	..	..	..	..	..	..	..	..	..	..	..	..	......	785
Cerebro-Spinal Meningitis	15	5	....	4	4	2	....	....	10	1	1	2	1	1	..	1	1	..	..	1	1	..	..	..	..	..	..	..	.....	20
Intermittent Fever	8	3	....	....	1	....	....	....	1	1	1	1	2	2	2	..	..	..	..	1	..	..	..	..	..	..	..	..	....	11
Remittent Fever	34	21	1	2	4	4	3	2	15	5	3	3	4	6	3	7	1	1	1	1	2	2	1	..	..	..	.	..	......	55
Yellow Fever	....	3	....	....	....	....	....	....	....	....	..	..	..	..	2	1	..	..	..	..	..	..	..	..	..	..	..	..	......	3
Irritative Fever	16	20	1	3	1	5	1	2	12	2	1	2	1	4	2	2	2	1	2	..	1	1	1	1	1	..	..	..	.. . .	36
Pyæmia	15	14	....	1	1	....	3	....	5	1	2	4	2	3	5	2	3	1	1	..	..	..	..	..	..	..	..	..	......	29
Total Miasmatic Diseases	2,611	636	31	1168	673	251	183	107	2,382	186	43	43	88	85	71	64	46	50	39	47	37	25	23	5	8	4	1	..	......	3,247

CAUSES OF DEATH.	FEMALES.																														Total both sexes.	Percentage of each cause on total.
	NATIVITY.		Colored.	Under 1 year.	1-	2-	3-	4-	Tot'l under 5 years.	5-	10-	15-	20-	25-	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-	80-	85-	90-	95-	100 and upward.	Total females.		
	U.States	Foreign.																														
CLASS I.—ZYMOTIC DISEASES.																																
ORDER 1. (MIASMATIC DISEASES.)																																
Small-pox	4	3	....	4	1	....	....	..	5	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	....	7	19	.08
Varicella	2	....	....	2	....	....	....	..	2	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	2	4	.01
Erythema	2	....	....	2	....	....	....	..	2	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	2	2	.01
Measles	189	18	1	39	88	40	21	6	194	11	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	....	207	459	1.96
Scarlatina	361	18	....	36	67	95	63	42	303	68	6	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	379	793	3.38
Diphtheria	132	111	1	35	45	21	11	10	122	14	2	1	2	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	....	143	288	1.23
Quinsy (Tonsilitis, &c.)	3	1	....	....	1	1	....	1	3	....	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	4	9	.04
Croup	146	9	....	28	42	45	16	8	139	15	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	155	326	1.39
Whooping cough	85	3	....	45	25	9	3	2	84	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	88	147	.63
Typhus Fever	25	52	1	....	....	1	2	1	4	13	2	1	15	6	7	7	7	5	3	2	2	3	..	..	..	..	..	..	....	77	199	.85
Typhoid Fever	82	121	1	3	3	4	6	6	22	20	12	27	20	19	17	23	7	13	7	6	5	2	2	1	..	..	..	..	....	203	404	1.72
Erysipelas	41	13	....	26	3	....	....	..	29	7	..	1	..	..	1	4	..	..	2	2	3	2	1	..	1	..	..	..	....	54	116	.49
Puerperal Fever	18	61	....	....	....	....	....	..	......	....	..	6	18	18	19	14	4	..	..	..	..	..	..	..	..	..	..	..	....	79	79	.34
Carbuncle	2	....	....	....	....	....	....	..	....	....	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	....	2	3	.01
Dysentery	138	85	....	68	38	10	3	6	125	8	2	7	3	11	8	10	6	7	6	10	5	5	4	5	1	..	..	..	....	223	484	2.07
Diarrhœa	381	111	13	270	87	21	3	3	384	4	2	4	7	11	10	8	7	8	9	4	7	3	9	5	3	6	1	..	....	492	1027	4.38
Cholera (Asiatic)	9	49	....	....	1	....	1	..	2	2	1	..	3	8	11	8	7	6	3	2	2	2	1	..	..	..	..	..	....	58	91	.39
Cholera Morbus	10	24	1	2	2	....	....	2	6	....	..	1	2	3	4	3	3	3	1	5	..	2	1	..	..	..	..	..	....	34	67	.29
Cholera Infantum	713	13	6	481	226	16	2	..	725	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	726	1511	6.44
Cerebro-Spinal Meningitis	11	1	....	3	4	1	1	..	9	....	2	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	12	32	.14
Intermittent Fever	3	8	....	....	....	1	2	1	4	....	1	..	2	..	1	1	1	..	..	..	..	..	1	..	..	..	..	..	....	11	22	.09
Remittent Fever	21	12	....	2	1	4	1	1	9	3	3	2	3	1	1	2	2	..	..	2	1	2	..	2	..	..	..	..	....	33	88	.38
Yellow Fever	....	....	....	....	....	....	....	..	.....	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	....	3	.01
Irritative Fever	10	15	....	5	....	....	....	..	5	2	1	2	2	..	2	2	1	..	..	3	3	1	..	1	..	..	..	..	....	25	61	.26
Pyæmia	12	15	....	5	....	1	....	..	6	2	..	1	3	5	3	3	2	1	1	..	..	..	..	..	..	..	..	..	....	27	56	.24
Septicæmia	2	2	....	....	....	....	....	..	......	....	..	..	..	..	1	2	1	..	..	..	..	..	..	..	..	..	..	..	....	4	4	.02
Total Miasmatic Diseases	2402	645	24	1056	634	270	135	89	2184	175	35	54	82	86	86	88	49	43	32	36	28	24	19	14	5	6	1	..	....	3047	6294	26.85

Deaths in New York.—Continued.

CAUSES OF DEATH.	MALES.																												
	NATIVITY.		Colored.	Under 1 year.	1–	2–	3–	4–	Total under 5 years.	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100 and upward.	Total Males.
	U.States	Foreign.																												
CLASS I.—Continued.																														
ORDER 2. (ENTHETIC AND INOCULATED DISEASES.) ✓																														
Syphilis ✓	35	4	3	31	1	....	....	...	32	....	..	..	..	2	1	1	1	1	..	..	1	..	..	..	..	..	..	..	.....	39
Hydrophobia ✓	1	2	....	....	....	....	....	....	....	....	1	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	......	3
Total Enthetic Diseases	36	6	3	31	1	....	....	....	32	....	1	1	1	2	1	1	1	1	..	..	1	..	..	..	..	..	..	..	......	42
ORDER 3. (DIETIC DISEASES.) ✓																														
Inanition ✓	184	11	1	185	3	1	....	....	189	....	..	..	1	1	..	..	..	1	..	2	..	..	1	..	..	..	..	..	......	195
Want of Breast Milk ✓	3	....	....	3	....	....	....	....	3	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	......	3
Purpura ✓	9	....	....	5	....	....	....	1	6	....	..	1	..	..	2	.	..	..	..	..	..	..	..	..	..	..	..	..	.....	9
Scurvy ✓	1	1	....	1	....	....	....	....	1	....	..	..	..	1	..	..	..	..	..	..	.	..	..	..	..	..	..	..	......	2
Alcholism (a) Intemperance ✓	7	26	....	....	....	...	....	....	....	....	..	1	2	2	3	5	6	3	4	2	3	1	..	1	..	..	..	..	.....	33
Alcholism (b) Del. Tremens ✓	14	43	....	....	....	....	....	....	....	....	..	..	2	7	10	17	1	11	7	1	..	..	..	..	..	1	..	..	.....	57
Total Dietic Diseases	218	81	1	194	3	1	....	1	199	....	..	2	5	11	15	22	7	15	11	5	3	1	1	1	..	1	..	..	......	299
Total of Zymotic Diseases	2865	723	35	1393	677	252	183	108	2613	196	44	46	94	98	87	87	54	66	50	52	41	26	24	6	8	5	1	...	......	3588

CAUSES OF DEATH.	FEMALES.																													Total both Sexes.	Percentage of each Cause on Total.
	NATIVITY.																														
	United States.	Foreign.	Colored.	Under 1 year	1–	2–	3–	4–	Total under 5 years.	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100 and upward.	Total Females.		
CLASS I—Continued.																																
ORDER 2. (ENTHETIC AND INOCULATED DISEASES.																																
Syphilis	31	6	....	26	....	....	....	....	26	..	..	1	6	1	..	..	2	..	1	..	..	..	..	..	..	..	..	..	....	37	76	.33
Malignant Pustule	2	2	....	....	....	....	....	....	....	..	..	..	..	1	1	..	..	1	..	1	..	..	..	..	..	..	..	..	....	4	4	.01
Hydrophobia	....	1	....	....	....	....	....	...	....	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	1	4	.02
Total Enthetic Diseases	33	9	....	26	....	....	....	....	26	1	..	1	6	2	1	..	2	1	1	1	..	..	..	..	..	..	..	..	....	42	84	.36
ORDER 3. (DIETIC DISEASES.)																																
Inanition	153	16	1	155	4	....	....	....	159	..	..	..	1	..	2	..	1	3	1	..	..	1	..	..	1	..	..	..	....	169	304	1.55
Want of Breast Milk	2	....	....	2	....	....	....	....	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	2	5	.02
Purpura............................	6	3	....	5	....	....	...	....	5	..	..	2	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	....	9	18	.08
Scurvy	....	....	....	....	....	....	....	....	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	......	2	.01
Alcoholism.. (a) Intemperance	3	23	....	....	....	....	....	....	....	..	..	..	1	2	6	4	7	3	1	..	1	..	1	..	..	..	..	..	....	26	59	.25
Alcoholism.. (b) Del. Tremens	1	3	....	....	....	....	....	....	....	..	..	..	..	..	..	2	..	..	.	2	..	..	..	..	..	..	..	..	....	4	61	.26
Total Dietic Diseases.........	165	45	1	162	4	....	....	....	166	..	..	2	2	3	9	6	8	6	2	2	1	1	1	..	1	..	..	..	....	210	500	2.17
ORDER 4. (PARASITIC DISEASES.)																																
Trichinosis	......	1	....	....	....	....	....	....	....	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	.	..	....	1	1	.00
Total Parasitic Diseases	....	1	....	....	....	....	....	....	....	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	....	1	1	
Total of Zymotic Diseases....	2600	700	25	1244	638	270	135	89	2376	176	35	57	90	91	97	94	59	50	35	39	29	25	20	14	6	6	1	......	......	3300	6888	29.37

Deaths in New York—Continued.

CAUSES OF DEATH.	MALES.																													
	NATIVITY.		Colored.	Under 1 year.	1–	2–	3–	4–	Total under 5 years.	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100 and upward.	Total males.
	U.States	Foreign.																												
CLASS II.—CONSTITUT'L DISEASES.																														
ORDER I. (DIATHETIC DISEASES.)																														
Gout	1	....	..	...	....	..	..	..	....	..	..	..	....	....	....	....	....	....	....	..	..	..	1	..	..	..	..	..	......	1
Rheumatism	7	12	..	....	....	1	..	..	1	..	1	1	....	1	3	....	4	....	3	..	3	1	..	1	..	..	..	..	....	19
Dropsy	47	37	2	6	....	4	4	3	17	7	5	4	....	3	6	5	4	3	7	5	4	7	4	1	1	1	..	..	......	84
Cancer (part not stated)	5	16	..	1	....	..	..	..	1	1	1	..	....	....	1	1	3	1	3	1	2	3	2	..	1	..	..	..	......	21
Cancer, of Breast	....	1	..	....	....	..	..	..	....	..	..	..	....	....	....	....	....	....	....	..	1	..	..	..	..	..	..	..	......	1
Cancer, of Bladder 49	1	....	..	....	....	..	..	..	....	..	..	..	....	....	....	....	....	....	....	.	..	..	1	..	..	..	..	..	......	1
Cancer, of Kidneys 44	1	1	..	....	....	..	..	..	....	..	..	..	....	....	1	....	....	....	....	1	..	..	..	..	..	..	..	..	......	2
Cancer, of Liver	4	5	..	....	....	..	..	..	....	..	..	..	1	1	....	2	....	1	1	..	1	2	..	..	..	..	..	..	......	9
Cancer, of Lip 43	....	1	..	....	....	..	..	..	....	..	..	..	....	....	....	....	....	....	....	1	..	..	..	..	..	..	..	..	......	1
Cancer, of Peritoneum 45	1	....	..	....	....	..	..	..	....	..	..	..	....	....	....	....	1	....	....	..	..	..	..	..	..	..	..	..	......	1
Cancer, of Rectum 45	1	1	..	....	....	..	..	..	....	..	..	..	....	....	....	....	....	....	....	..	1	..	..	1	..	..	..	..	......	2
Cancer, of Stomach	8	39	1	....	....	..	.	..	....	..	..	..	1	....	3	4	6	8	7	4	7	4	2	..	1	..	..	..	.....	47
Cancer, of Tongue 43	1	....	..	....	....	..	..	..	....	..	..	..	....	....	....	....	....	....	....	..	..	..	1	..	..	..	..	..	......	1
Cancer, of Testis 49	2	....	..	....	....	..	..	..	....	..	..	..	....	....	....	....	....	....	....	1	1	..	..	..	..	..	..	..	......	2
Osteo sarcoma 49	....	1	..	....	....	..	..	..	....	..	..	..	....	....	....	....	....	....	....	1	..	..	..	.	..	..	..	..	......	1
Noma (cancrum, oris, &c.)	1	1	..	....	....	..	..	..	....	1	..	..	....	....	....	....	1	....	....	..	..	..	..	..	..	..		..	......	2
Total Diathetic Diseases	80	115	3	7	....	5	4	3	19	9	7	5	2	5	14	12	19	13	21	14	20	17	11	3	3	1	..	..	......	195
ORDER 2. (TUBERCULAR DISEASES.)																														
Scrofula	54	8	2	29	7	6	2	1	45	7	3	1	2	1	1	1	1	....	....	..	..	..	..	..	..	..	..	..	......	62
Tabes Mesenterica	522	34	7	380	102	31	5	4	522	11	1	1	....	1	1	1	2	1	3	1	2	2	4	3	..	.	..	..	......	556
Phthisis Pulmonalis	554	1,106	59	48	27	14	6	8	103	24	22	64	198	216	190	210	175	137	107	73	59	47	15	18	1	1	..	..	......	1,660
Hydrocephalus	329	24	6	161	106	37	18	10	332	16	3	..	....	....	....	....	1	1	....	..	..	..	..	..	..	..	..	..	......	353
Lumbar Abscess	1	1	..	....	...	..	..	..	....	..	..	..	1	....	....	....	....	1	....	..	..	..	..	..	..	..	..	..	......	2
Total Tubercular Diseases	1,460	1,173	74	618	242	88	31	23	1,002	58	29	66	201	218	192	212	179	140	110	74	61	49	19	21	1	1	..	..	......	2,633
Total of Constitutional Diseases	1540	1288	77	625	242	93	35	26	1021	67	36	71	203	223	206	224	198	153	131	88	81	66	30	24	4	2	...	...	...	2828

CAUSES OF DEATH.	FEMALES.																														Total both sexes.	Percentage of each cause on Total.
	NATIVITY.		Colored.	Under 1 year.	1–	2–	3–	4–	Total under 5 years.	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100 and upward.	Total females.		
	U.States	Foreign.																														
CLASS II.—CONSTITU'L DISEASES.																																
ORDER I. (DIATHETIC DISEASES.)																																
Gout	....	....	..	....	....	..	..	..	......	..	..	...	...	...	...	...	...	...	..	..	..	..	..	..	..	..	..	..	....	....	1	.00
Rheumatism	12	11	2	....	....	..	..	..	......	3	1	...	3	4	...	3	...	...	3	1	1	1	..	..	3	..	..	..	....	23	42	.18
Dropsy	35	47	7	3	1	..	1	..	5	8	4	3	4	5	4	5	9	3	5	3	5	12	3	3	1	..	..	..	....	82	166	.70
Cancer, (part not stated)	12	18	..	....	....	..	..	..	......	..	..	1	1	1	1	4	5	6	2	2	3	2	1	1	..	..	..	..	....	30	51	.22
Cancer, of Breast	14	21	2	....	....	..	..	..	......	..	..	...	...	4	3	3	3	3	6	2	5	3	2	1	..	..	..	..	....	35	36	.16
Cancer, of Bladder	....	....	..	....	....	..	..	..	......	..	..	...	...	...	...	...	...	...	..	..	..	..	..	..	..	..	..	..	....	....	1	.00
Cancer, of Eye	1	....	..	....	....	..	..	..	......	1	..	...	...	...	...	...	...	...	..	..	..	..	..	..	..	..	..	..	....	1	1	.01
Cancer, of Kidneys	....	....	..	....	....	..	..	..	......	..	..	...	...	...	...	...	...	...	..	..	..	..	..	..	..	..	..	..	....	....	2	.01
Cancer, of Liver	2	12	..	....	....	..	..	..	......	..	..	...	...	1	1	...	2	2	2	..	1	3	1	1	..	..	..	..	....	14	23	.10
Cancer, of Lip	....	....	..	....	....	..	..	..	......	..	..	...	...	...	...	...	...	...	..	..	..	..	..	..	..	..	..	..	....	....	1	.00
Cancer, of Peritoneum	....	....	..	....	....	..	..	..	......	..	..	...	...	...	...	...	...	...	..	..	..	..	..	..	..	..	..	..	....	....	1	.01
Cancer, of Rectum	2	....	..	....	....	..	..	..	......	..	..	...	...	...	...	...	1	...	1	..	..	..	..	..	..	..	..	..	....	2	4	.02
Cancer, of Stomach	5	31	..	....	....	..	..	..	......	..	..	...	1	...	2	1	4	6	4	4	7	4	3	..	..	..	..	..	....	36	83	.36
Cancer, of Tongue	1	....	..	....	....	..	..	..	......	..	..	...	...	...	...	...	...	...	..	..	1	..	..	..	..	..	..	..	....	1	2	.01
Cancer, of Testis	....	....	..	....	....	..	..	..	......	..	..	...	...	...	...	...	...	...	..	..	..	..	..	..	..	..	..	..	....	....	2	.01
Cancer, of Uterus	27	58	1	....	....	..	..	..	......	1	..	...	1	5	7	9	15	16	9	7	8	5	2	..	..	..	..	..	....	85	85	.37
Osteo Sarcoma	....	....	..	....	....	..	..	..	......	..	..	...	...	...	...	...	...	...	..	..	..	..	..	..	..	..	..	..	....	....	1	.00
Noli me tangere	....	1	..	....	....	..	..	..	......	..	..	...	...	...	1	...	...	...	..	..	..	..	..	..	..	..	..	..	....	1	1	.00
Noma (cancrum, oris, &c.)	2	2	..	1	....	..	1	..	2	2	..	...	...	...	...	...	...	...	..	..	..	..	..	..	..	..	..	..	....	4	6	.03
Total Diathetic Diseases	113	201	12	4	1	..	2	..	7	15	5	4	10	20	19	25	39	36	32	19	31	30	12	6	4	..	..	..	....	314	509	2.17
ORDER 2. (TUBERCULAR DISEASES.)																																
Scrofula	35	10	..	17	3	3	2	..	25	4	3	2	...	1	2	1	1	1	1	..	1	1	1	1	..	..	..	..	....	45	107	.46
Tabes Mesenterica	436	43	4	304	101	22	8	5	440	7	1	2	1	...	...	1	1	1	1	2	2	3	6	6	3	2	..	..	....	479	1035	4.41
Phthisis Pulmonalis	578	1,048	42	37	25	10	12	8	92	16	22	97	228	230	208	213	134	98	88	55	45	41	25	16	15	3	..	..	....	1626	3286	14.02
Hydrocephalus	295	6	3	134	102	30	14	6	286	8	4	2	...	...	...	...	...	...	..	..	1	..	..	..	..	..	..	..	....	301	654	2.79
Lumbar Abscess	1	2	..	....	....	..	..	..	......	..	1	...	1	1	...	...	...	...	..	..	..	..	..	..	..	..	..	..	....	3	5	.02
Total Tubercular Diseases	1,345	1,109	49	492	231	65	36	19	843	35	31	103	230	232	210	215	136	100	90	57	49	45	32	23	18	5	..	..	....	2454	5087	21.70
Total of Constitutional Diseases	1458	1310	61	496	232	65	38	19	850	50	36	107	240	252	229	240	175	136	122	76	80	75	44	29	22	5	...	...	...	2768	5596	23.87

Deaths in New York—Continued.

CAUSES OF DEATH.	MALES.																													
	NATIVITY.		Colored.	Under 1 year.	1-	2-	3-	4-	Total under 5 yrs.	5-	10-	15-	20-	25-	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-	80-	85-	90-	95-	100 and upward.	Total Males.
	U.S.	For'n.																												
CLASS III.—LOCAL DISEASES.																														
ORDER 1. (NERVOUS SYSTEM.)																														
Meningitis ✓	332	58	4	116	83	34	22	20	275	42	8	7	5	9	8	6	16	4	3	4	2	1	...	...	...	...	..	...	....	390
Encephalitis ✓	64	23	2	16	20	6	5	1	48	7	2	4	2	2	4	3	2	5	2	2	1	...	2	1	...	...	...	...	....	87
Softening of Brain ✓ ✓	22	20	..	....	....	2	..	..	2	1	...	...	...	3	1	4	3	3	5	2	5	6	4	2	1	...	...	...	....	42
Apoplexy ✓	59	106	..	6	4	1	1	..	12	1	2	2	7	12	7	15	14	11	13	18	22	6	10	7	5	1	...	...	....	165
Paralysis ✓	35	39	1	3	2	..	..	..	5	3	1	...	...	5	6	4	6	12	7	4	4	3	8	3	2	1	...	...	....	74
Insanity ✓	..	15	..	....	....	..	..	..	......	..	...	...	...	1	2	4	4	3	1	...	...	...	...	...	...	...	...	...	....	15
Epilepsy ✓	15	20	..	1	1	..	..	1	3	1	...	5	6	...	4	6	3	...	3	1	...	1	...	2	...	...	...	...	....	35
Sunstroke 19k ✓	..	4	..	....	....	..	..	..	......	1	...	...	1	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	....	4
Convulsions 79+80 ✓	727	21	5	550	112	33	18	11	733	10	1	...	1	...	1	...	...	...	...	1	1	..	...	...	...	...	...	...	....	748
Tetanus 29 ✓	2	6	..	....	....	..	..	..	......	..	...	1	...	1	3	1	2	...	...	...	...	...	...	...	...	...	...	...	....	8
Trismus Nascentium 19 ✓	30	..	..	30	....	..	..	..	30	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....	30
Congestion of Brain ✓	125	61	1	55	25	5	8	5	98	1	2	3	5	6	9	12	6	10	7	8	5	8	4	1	...	...	...	1	....	186
Myelitis 73 ✓	2	3	..	....	....	..	.	..	......	1	1	...	1	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	....	5
Hemiplegia ✓	2	6	..	....	....	..	..	..	......	..	...	...	2	1	...	...	...	...	...	1	...	1	1	2	...	...	...	...	....	8
Paraplegia ✓	4	6	..	....	....	..	..	..	......	..	...	...	...	1	1	...	1	2	...	1	3	1	...	...	...	...	...	...	....	10
Chorea 81 ✓	2	..	..	....	....	..	..	..	......	..	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....	2
Tumor of Brain 84 ✓	1	..	..	....	....	..	..	..	......	..	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	....	1
Abscess of Brain ✓	1	..	..	....	....	..	..	..	......	..	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	....	1
Total Diseases of Nervous System,	1,423	388	13	786	247	81	54	38	1,206	68	19	22	30	41	46	58	57	50	42	43	43	27	30	18	8	2	...	1	....	1,811

CAUSES OF DEATH.	FEMALES.																													Total both Sexes.	Percentage of each Cause on Trial.
	NATIVITY.		Colored.	Under 1 year	1–	2–	3-	4–	Total under 5 years.	5–	10–	15–	20–	25–	30–	35–	40-	45–	50–	55–	60–	65-	70-	75–	80–	85$	90–	95–	100 and up-ward.	Total Fe-males.		
	United States.	Foreign.																														
CLASS III.—LOCAL DISEASES.																																
ORDER 1. (NERVOUS SYSTEM.)																																
Meningitis	256	28	1	94	69	27	14	8	212	31	4	4	12	..	7	5	3	4	2	..	..	..	..	..	..	..	..	..	....	284	674	2.88
Encephalitis	63	15	1	25	12	9	4	3	53	5	1	3	2	2	2	1	..	1	2	2	1	1	2	..	..	..	..	..	....	78	165	.70
Softening of Brain	16	18	....	3	....	1	....	....	4	..	..	..	1	2	3	4	3	1	3	2	5	4	1	..	1	..	..	..	....	34	76	.33
Apoplexy	47	62	1	9	3	....	....	1	13	..	..	1	2	4	7	7	8	4	6	10	14	9	14	4	4	2	..	..	....	109	274	1.17
Paralysis	26	30	1	1	....	....	1	....	2	1	..	1	..	2	3	1	7	5	8	3	1	10	5	4	1	1	1	..	....	55	130	.55
Insanity	3	11	....	....	....	....	....	....	....	..	..	1	2	2	3	3	..	..	2	..	1	..	..	..	..	..	..	..	....	14	29	.13
Epilepsy	18	18	1	1	....	....	1	....	2	..	2	5	8	7	3	3	1	2	1	..	1	..	1	..	..	..	..	..	....	36	71	.31
Sunstroke	....	1	....	....	....	....	....	....	....	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	1	5	.02
Convulsions	608	22	7	440	115	33	18	6	612	11	2	..	1	2	..	..	..	..	..	..	..	1	1	..	..	..	..	..	....	630	1,378	5.88
Tetanus	3	....	....	1	....	1	....	....	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	3	11	.05
Trismus Nascentium	7	....	....	7	....	....	....	....	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	7	37	.16
Congestion of Brain	113	44	2	48	24	3	4	5	84	7	3	3	8	4	5	9	3	6	7	3	5	2	5	2	1	..	..	..	....	157	343	1.48
Myelitis	4	2	....	....	....	....	....	1	1	2	..	..	1	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	....	6	11	.05
Hemiplegia	3	5	2	....	....	....	....	....	....	..	..	..	..	..	1	1	..	..	1	1	..	1	3	..	..	..	..	..	....	8	16	.07
Paraplegia	3	3	....	....	....	....	....	....	....	..	..	..	..	1	..	1	2	1	..	..	..	..	..	1	..	..	..	..	....	6	16	.07
Chorea	....	....	....	....	....	....	....	....	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	......	2	.01
Progressive Locomotor Ataxia	1	....	....	....	....	....	....	....	....	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	1	1	.00
Tumor of Brain	....	....	....	....	....	....	....	....	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	......	1	.00
Abscess of Brain	....	....	....	....	....	....	....	....	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	......	1	.01
Total Dis. of Nervous System	1,171	259	16	629	223	74	42	24	992	58	12	18	38	27	35	35	27	25	32	21	28	28	32	11	7	3	1	..	....	1,430	3,241	13.82

Deaths in New York—Continued.

CAUSES OF DEATH.	MALES.																													
	NATIVITY.																													
	U. States.	Foreign.	Colored.	Under 1 year.	1-	2-	3-	4-	Tot'l under 5 years.	5-	10-	15-	20-	25-	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-	80-	85-	90-	95-	100 and upward.	Males. Total.
CLASS III—Continued.																														
ORDER 2. (CIRCULATORY SYSTEM.)																														
Pericarditis 89 ✓	24	28	1	1	....	....	....	1	2	6	6	2	5	1	8	5	2	2	4	2	4	1	1	1	..	..	..	..	....	52
Aneurism of Heart 90 ✓	2	7	....	....	....	....	....	....	....	1	1	..	..	..	2	..	2	..	1	1	..	1	..	..	..	..	..	..	....	9
Aneurism of Aorta 91 ✓	11	19	....	....	....	....	....	....	....	..	..	..	..	..	6	7	5	4	6	..	..	..	2	..	..	..	..	..	....	30
Disease of Heart 90 ✓	75	110	5	7	....	2	....	1	10	5	5	7	11	19	13	15	15	7	18	11	20	11	7	4	6	1	..	..	....	185
Hypertrophy of Heart 90 ✓	18	27	2	1	1	....	2	....	4	2	1	1	2	1	..	5	..	7	6	1	6	4	4	1	..	..	..	..	....	45
Valvular Disease of Heart 90 ✓	40	32	1	5	....	1	1	..	7	2	3	3	6	7	5	6	8	3	2	4	7	2	2	2	3	..	..	..	....	72
Fatty Degeneration of Heart 92 ✓	8	3	1	....	....	....	....	....	....	..	..	..	1	1	1	..	1	1	3	..	..	3	..	..	..	..	..	..	....	11
Phlebitis 93 ✓	2	1	....	2	....	....	....	....	2	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	....	3
Ossification of Heart 90 ✓	....	1	....	....	....	....	....	....	....	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	....	1
Rheumatism of Heart 90 ✓	....	1	....	....	....	....	....	....	....	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	....	1
Angina Pectoris 89 ✓	....	2	....	....	....	....	....	....	....	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	....	2
Total Circulatory Diseases	180	231	10	16	1	3	3	2	25	16	16	13	25	30	36	39	33	24	40	20	37	22	17	8	9	1	..	..	....	411
ORDER 3. (RESPIRATORY SYSTEM. ✓																														
Laryngitis 98	30	8	....	6	7	4	2	4	23	1	1	..	1	1	4	..	2	4	..	1	..	..	..	..	..	..	..	..	....	38
Bronchitis 99 ✓	316	48	2	83	80	17	10	....	190	8	1	1	2	4	6	4	6	5	5	7	9	6	5	1	2	1	1	..	....	364
Pleuritis 102 ✓	12	13	....	2	2	2	1	....	7	..	..	1	1	2	6	1	1	3	1	..	1	1	..	..	..	..	..	..	....	25
Hydrothorax 102 ✓	17	13	....	1	1	....	2	1	5	5	..	..	1	2	3	2	2	1	3	1	2	1	1	1	..	..	..	..	....	30
Pneumonia 101 ✓	547	231	11	263	116	45	22	14	460	23	7	9	26	21	25	26	33	30	34	24	20	17	10	10	1	1	1	..	....	778
Asthma 105 ✓	5	16	1	2	....	....	....	...	2	..	.	1	..	..	..	3	2	2	..	3	5	..	1	1	..	..	1	..	....	21
Gangrene of Lungs 104 ✓	13	6	1	6	1	....	....	....	7	1	..	..	2	3	1	..	2	1	..	..	..	1	1	..	..	..	..	..	....	19
Congestion of Lungs 103 ✓	133	48	4	57	15	10	2	6	90	5	4	2	6	4	3	11	14	7	9	2	9	8	5	1	..	1	..	.	....	181
Hemorrhage of Lungs 103 ✓ ✓	29	49	2	6	1	....	1	....	8	2	1	1	2	8	11	9	4	12	3	6	3	5	..	1	2	..	..	..	....	78
Abscess of Lungs 107 ✓	....	1	....	....	....	....	....	....	....	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	1
Epistaxis 95 ✓	1	....	....	....	....	....	....	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	1
Total diseases of Respiratory System.	1,103	433	21	526	223	78	40	26	893	46	14	15	41	45	59	56	66	65	55	44	49	39	23	15	5	3	3	..	....	1,536

CAUSES OF DEATH.	FEMALES.																													Total both sexes.	Percentage of each Cause on Total.
	Nativity.		Colored.	Under one year.	1–	2–	3–	4–	Total under 5 y'rs.	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100 and upward.	Total Females.		
	United States.	Foreign.																														
CLASS III—Continued.																																
ORDER 2. (CIRCULATORY SYSTEM.)																																
Pericarditis ✓	15	14	2	2	....	....	1	....	3	1	..	2	3	4	2	3	1	1	2	2	3	1	1	..	..	..	..	..	....	29	81	.35
Aneurism of Heart 9D	1	4	....	....	....	....	....	....	....	..	..	..	2	1	..	..	1	..	..	..	..	..	..	1	..	..	..	..	....	5	14	.06
Aneurism of Aorta ✓	3	9	3	....	....	....	....	....	....	..	..	..	..	1	4	1	3	..	1	1	..	1	..	..	..	..	..	..	....	12	42	.18
Disease of Heart 9.D	65	75	8	4	....	2	....	1	7	9	9	5	10	5	8	11	7	7	14	17	8	9	11	2	1	..	..	..	....	140	325	1.39
Hypertrophy of Heart 9.D	27	19	1	2	....	1	....	1	4	3	7	2	1	2	5	2	4	1	2	2	2	5	2	..	2	..	..	..	....	46	91	.39
Valvular Disease of Heart 9.D.	28	28	1	3	....	....	2	....	5	2	4	2	3	4	5	5	4	5	4	1	6	1	2	1	2	..	..	..	....	56	128	.54
Fatty Degeneration of Heart 9.D	6	9	....	....	....	1	....	....	1	..	..	..	..	1	1	1	2	2	4	1	1	..	1	..	..	..	..	..	....	15	26	.12
Atrophy of Heart 9D	1	....	....	....	....	....	....	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	1	1	.00
Phlebitis 43 ✓	1	....	....	....	....	....	....	....	....	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	1	4	.02
Ossification of Heart 9.D	1	1	....	....	....	....	....	....	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	....	2	3	.01
Rupture of Heart 9D	....	1	....	....	....	....	....	....	....	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	....	1	1	.00
Rheumatism of Heart 9D	....	....	....	....	....	....	....	....	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	....	1	.01
Angina Pectoris ✓	....	2	....	....	....	....	....	....	....	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	....	2	4	.02
Total Circulatory Diseases	148	162	15	11	....	4	3	3	21	15	21	11	19	18	25	25	22	17	27	24	20	17	17	5	5	1	..	..	....	310	721	3.08
ORDER 3. (RESPIRATORY SYSTEM.)																																
Laryngitis ✓	29	1	....	7	7	6	1	2	23	..	..	1	1	3	1	..	..	1	..	..	..	..	..	..	..	..	..	..	....	30	68	.29
Bronchitis ✓	249	73	2	155	44	12	6	5	222	4	..	..	4	6	8	5	5	3	9	6	8	11	17	5	6	2	..	1	....	322	686	2.93
Pleuritis ✓	7	9	1	1	2	....	....	1	4	..	..	..	1	1	1	1	2	..	1	..	3	..	1	..	1	..	..	..	....	16	41	.18
Hydrothorax ✓	8	7	....	....	....	....	....	1	1	2	1	..	1	1	2	1	..	1	1	1	..	1	2	..	..	..	..	..	....	15	45	.20
Pneumonia ✓	458	179	19	196	96	42	18	12	364	17	7	10	18	24	24	15	24	16	18	17	22	21	18	9	8	2	2	1	....	637	1,415	6.04
Asthma ✓	9	14	2	3	1	....	....	....	4	..	..	..	1	..	3	1	1	..	2	3	5	2	1	..	..	..	..	..	....	23	44	.20
Gangrene of Lungs ✓	4	4	....	2	1	....	....	....	3	..	..	..	..	..	2	1	..	..	2	..	..	..	..	..	..	..	..	..	....	8	27	.12
Congestion of Lungs ✓	103	37	3	50	16	10	1	3	80	2	1	1	1	6	5	7	2	7	3	6	6	7	2	4	..	..	..	..	....	140	321	1.37
Hemorrhage of Lungs ✓	26	23	....	4	....	1	1	....	6	1	1	6	3	3	5	7	4	2	3	..	5	1	1	..	..	1	..	..	....	49	127	.54
Abscess of Lungs ✓	....	1	....	....	....	....	....	....	....	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	1	1	.00
Epistaxis ✓	....	....	....	....	....	....	....	....	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	....	2	.01
Total Diseases of Respiratory System	893	348	27	418	167	71	27	24	707	27	10	18	30	44	51	38	38	30	39	33	49	43	42	18	15	5	2	2	....	1,241	2,777	11.85

Deaths in New York.—Continued.

CAUSES OF DEATH.	MALES.																													
	NATIVITY.		Colored.	Under 1 year.	1–	2–	3–	4–	Total under 5 years.	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100 and upward.	Total Males.
	U. States.	Foreign.																												
CLASS III.—Continued.																														
ORDER 4. (DIGESTIVE SYSTEM. ✓																														
Gastritis 112 ✓	61	18	1	29	10	2	4	..	45	2	..	1	2	..	..	3	5	7	2	2	4	1	3	1	..	1	..	..	......	79
Enteritis 114 ✓	127	32	2	82	13	7	1	..	103	6	3	2	6	2	6	11	5	3	4	1	1	2	3	..	1	..	..	..	......	159
Peritonitis 126 ✓	46	33	1	11	....	2	1	2	16	6	9	6	8	3	4	5	4	1	3	5	3	5	1	..	..	..	..	..	......	79
Ascites 122 ✓	4	14	1	1	....	....	....	..	1	..	..	..	1	1	1	2	3	4	4	..	..	1	..	..	..	..	..	..	......	18
Ulceration of Intestines 114 ✓	5	2	....	3	1	....	....	..	4	..	.	..	..	..	1	..	..	2	..	..	..	..	..	..	..	..	..	..	......	7
Stricture of Intestines 118 ✓	3	....	1	1	....	....	....	..	1	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	......	3
Perforation of Intestine 119 ✓	2	1	....	......	....	....	....	..	....	..	..	1	..	..	..	..	..	..	1	.	..	..	1	..	..	..	..	..	......	3
Hernia 118 ✓	2	9	....	1	....	....	....	..	1	..	..	..	1	1	1	..	1	1	2	1	1	..	..	1	..	..	..	..	......	11
Cirrhosis of Liver 122 ✓	18	36	1	......	....	....	....	..	....	..	..	1	..	7	6	7	2	6	10	6	4	5	..	..	..	..	..	..	......	54
Bilious Colic 113-114 ✓	3	4	1	1	1	....	....	..	2	..	..	1	..	..	1	..	..	..	..	1	..	1	1	..	..	..	..	..	......	7
Intussusception 118 ✓	4	5	....	3	....	....	1	..	4	1	..	..	1	..	..	2	1	..	..	..	..	..	..	..	..	..	..	..	......	9
Fistula in Ano 119 ✓	....	1	1	......	....	....	....	..	....	..	..	..	..	..	..	..	..	..	1	.	..	..		..	..	..	..	..	......	1
Ulcer of Stomach 111 ✓	2	8	....	......	....	....	....	..	....	..	..	..	..	..	..	1	1	.	2	4	1	..	1	.	..	..	..	..	......	10
Hepatitis 124 ✓	8	28	1	1	1	....	....	..	2	1	..	..	..	4	5	6	4	5	4	3	1	1	..	..	..	..	..	..	......	36
Jaundice 124 ✓	14	2	....	11	....	....	....	..	11	..	..	..	..	..	1	1	.	1	.	..	..	..	1	1	..	..	..	..	......	16
Liver Disease 124 ✓	8	5	....	5	....	....	....	..	5	..	..	..	1	..	1	3	1	..	1	..	1	..	..	..	..	..	..	..	......	13
Spleen Disease 64 ✓	1	3	....	1	....	....	....	..	1	..	..	..	1	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	......	4
Paint Colic 67 ✓	....	1	....	......	....	....	....	..	....	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	......	1
Abscess of Liver 124 ✓	3	3	....	......	....	....	....	..	....	..	..	..	1	1	..	..	..	1	1	1	1	..	..	..	..	..	..	..	......	6
Fatty Liver 122 ✓	3	....	....	......	....	....	....	..	....	..	..	..	..	..	..	1	..	1	1	..	..	..	..	..	..	..	..	..	......	3
Malæna 119 ✓	1	....	....	......	....	....	....	..	....	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	......	1
Anæmia 58 ✓	8	2	....	5	....	....	....	..	5	..	..	..	..	..	..	1	1	..	..	1	..	1	1	..	..	..	..	..	......	10
Total Dis. of Digestive System	323	207	10	155	26	11	7	2	201	16	12	12	22	19	27	44	29	33	37	25	18	17	13	3	1	1	..	..	......	530

CAUSES OF DEATH.	FEMALES.																															
	NATIVITY.		Colored.	Under 1 year	1–	2–	3–	4–	Total under 5 years.	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100 and upward.	Total Females.	Total both Sexes.	Percent. of each Cause on Total.
	United States.	Foreign.																														
CLASS III.—CONTINUED.																																
ORDER 4. (DIGESTIVE SYSTEM.)																																
Gastritis	45	35	2	21	6	1	1	3	32	3	2	1	1	5	3	8	3		4	3	3	8	2	2						80	159	.67
Enteritis	91	29	3	56	8	8	1	1	74	3	2	3	4	2	4	8	2	4	2	1	5	4		2						120	279	1.19
Peritonitis	33	69	3	4		1			5	2	4	3	9	22	7	15	4	12	6	5	3	1	1	2	1					102	181	.77
Ascites	5	12												2	1	2	2	3	2	2	1	2								17	35	.15
Ulceration of Intestines	4			3		1			4																					4	11	.05
Stricture of Intestines 119	1														1															1	4	.02
Perforation of Intestine	1													1																1	4	.02
Abscess of Bowels 119	1	1													1									1						2	2	.01
Hernia 118	3	6												2	1					1	3			1	1					9	20	.08
Cirrhosis of Liver	7	21												3	2	5	5	1	3	3	3	1		2						28	82	.35
Bilious Colic	1																							1						1	8	.04
Intussusception 118	3	1		2			1		3			1																		4	13	.06
Fistula in Ano	1													1																1	2	.01
Ulcer of Stomach	3	5		2					2	1					1	1		1	1		1									8	18	.08
Hepatitis	8	31	2	2					2	1		1	2	2	1	4	3	4	6	5	1	3	2	2						39	75	.33
Jaundice	5	3		4			1		5							1			1	1										8	24	.10
Liver Disease	8	9		2	1				3	1				3		1	1	1	2	1	1			1	1	1				17	30	.13
Spleen Disease		1													1															1	5	.02
Paint Colic																															1	.00
Abscess of Liver	1	1													1				1											2	8	.04
Fatty Liver		1														1														1	4	.02
Malæna																															1	.00
Occlusion of Gall Duct 129	1			1					1																					1	1	.00
Œsophagitis 109	1	1																	1	1										2	2	.01
Anæmia	3	1		2					2				2																	4	14	.06
Total Diseases of Digestive System	226	227	10	99	15	11	4	4	133	11	8	9	18	43	24	46	20	26	39	23	21	19	5	14	3	1				453	938	4.15

Deaths in New York—Continued.

CAUSES OF DEATH.	MALES.																													
	NATIVITY.																													
	United States.	Foreign.	Colored.	Under 1 year.	1–	2–	3–	4–	Total under 5 years.	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100 and upward.	Total Males.
CLASS III—Continued.																														
ORDER 5. (URINARY SYSTEM.)																														
Nephritis ✓ 128	12	17	1	2	....	2	2	....	6	5	..	1	1	..	1	3	3	3	2	2	..	..	1	..	..	1	..	..	......	29
Nephria (Bright's Disease) ✓ ✓ 128	76	139	8	2	2	2	4	2	12	7	4	4	12	10	27	28	20	28	17	19	11	7	5	3	1	..	..	..	......	215
Diabetes 57 ✓	5	4	....	......	....	....	....	....	......	1	..	..	1	..	..	..	..	3	..	1	..	2	..	1	..	..	..	..	......	9
Stone 137 ✓ ✓	....	2	....	......	....	...	....	....	......	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	......	2
Cystitis 133 ✓ ✓	4	15	....	1	....	....	....	....	1	..	..	..	1	..	2	2	1	1	2	1	2	1	5	..	..	..	..	..	......	19
Kidney Disease 131 ✓	4	4	....	......	....	....	....	....	......	..	..	..	1	1	1	1	2	..	..	1	1	..	..	..	..	..	..	..	......	8
Stricture of Urethra 134 ✓ ✓	2	3	....	....	....	....	....	...	.....	..	..	..	..	..	..	..	..	..	2	1	..	1	1	..	..	..	..	..	......	5
Suppression of Urine 131	....	1	....	......	....	....	....	....	......	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	......	1
Gangrene of Scrotum 151 ✓ ✓	....	1	....	......	....	....	....	....	......	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	.....	1
Abscess of Kidneys 131	1	2	....	......	....	....	...	....	......	..	..	1	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	.....	3
Uræmia 128 ✓	14	12	3	1	1	....	..	....	2	..	..	..	1	2	3	3	3	2	1	2	3	2	1	..	..	1	..	..	......	26
Total Diseases of Urinary System	118	200	12	6	3	4	6	2	21	13	4	6	18	14	34	37	29	38	26	27	18	13	14	4	1	2	..	..	......	318
ORDER 7. (LOCOMOTORY SYSTEM.)																														
Hip-joint Disease 35 ✓ ✓	11	2	....	1	....	....	1	....	2	2	4	1	..	3	1	..	..	..	..	..	..	..	..	..	..	..	..	..	......	13
Osteo-Myelitis 155 ✓ ✓	1	1	....	......	....	1	....	....	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	......	2
Necrosis 155	1	1	1	......	....	....	....	....	......	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	......	2
Caries 155 ✓ ✓	3	3	1	......	....	....	....	1	1	1	1	..	..	1	1	..	..	..	..	1	..	..	..	..	..	..	..	..	......	6
Synovitis 156	1	1	....	......	....	....	1	....	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	......	2
Necrosis of Femur 155 ✓ ✓	1	....	....	......	....	....	....	....	......	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	......	1
Disease of Spine 3 ✓	6	1	....	......	....	....	1	....	1	2	1	1	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	......	7
Total Diseases of Locomotory System	24	9	2	1	....	1	3	1	6	5	6	3	1	5	4	1	1	..	..	1	..	..	..	..	..	..	..	..	......	33

CAUSES OF DEATH.	FEMALES.																															
	NATIVITY.																															
	U. S.	Foreign	Colored.	Under 1 year.	1–	2–	3–	4–	Total under 5 years.	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100 and upw'd.	Total Females	Total both Sexes.	Percent. of each Cause on Total.
CLASS III.—Continued.																																
ORDER 5. (URINARY SYSTEM.) ✓																																
Nephritis	8	8	....	1	....	1	1	2	5	3	....	....	1	1	1	....	2	1	....	1	....	1	....	....	....	....	....	....	....	16	45	.19
Nephria (Bright's Disease) ✓ ✓	68	97	7	....	1	....	....	1	2	4	5	3	20	21	15	24	14	9	13	7	11	10	2	2	3	....	....	....	....	165	380	1.62
Diabetes ✓	4	1	....	....	....	....	....	....	....	1	....	....	....	3	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	5	14	.06
Stone ✓	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	.01
Cystitis ✓	1	6	....	....	....	....	....	....	....	....	....	....	....	1	1	....	1	1	....	1	....	....	2	....	....	....	....	....	....	7	26	.11
Kidney Disease ✓ ✓	3	4	....	....	....	1	....	....	1	....	....	....	....	2	....	1	1	1	....	....	....	....	....	....	1	....	....	....	....	7	15	.07
Stricture of Urethra ✓ ✓	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5	.02
Suppression of Urine ✓	1	....	....	....	....	....	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	2	.00
Gangrene of Scrotum ✓ ✓	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.01
Abscess of Kidneys ✓	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	.01
Uræmia	19	8	....	....	2	1	1	1	5	1	2	2	4	3	2	....	2	3	2	1	....	....	....	....	....	....	....	....	....	27	53	.23
Total Dis. of Urinary System	104	124	7	1	3	3	3	4	14	9	7	5	25	31	19	26	20	15	15	10	11	11	4	2	4	....	....	....	....	228	546	2.33
ORDER 6. (GENERATIVE SYSTEM.) ✓																																
Ovarian Dropsy 137 ✓	1	8	....	....	....	....	....	....	....	....	....	....	....	2	1	....	2	1	1	1	1	....	....	....	....	....	....	....	....	9	9	.04
Ovarian Tumor 139 ✓	2	5	....	....	....	....	....	....	....	....	....	....	2	....	....	1	2	2	....	....	....	....	....	....	....	....	....	....	....	7	7	.03
Uterine Tumor ✓ 139	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	1	....	....	....	....	....	....	....	2	2	.01
Metritis 141 ✓	13	19	....	....	....	....	....	....	....	....	....	....	7	6	9	5	3	2	....	....	....	....	....	....	....	....	....	....	....	32	32	.14
Uterus Disease 141 ✓	1	3	....	....	....	....	....	....	....	....	....	....	1	1	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	4	4	.02
Fallopian Pregnancy 143 ✓	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	1	1	.00
Metro-Peritonitis 141 ✓	5	28	....	....	....	....	....	....	....	....	....	1	10	8	5	8	1	....	....	....	....	....	....	....	....	....	....	....	....	33	33	.14
Total Dis. of Generative System.	23	65	....	....	....	....	....	....	....	....	....	1	20	17	16	15	8	7	1	1	1	1	....	....	....	....	....	....	....	88	88	.38
ORDER 7. (LOCOMOTORY SYSTEM.)																																
Hip-Joint Disease ✓	4	2	....	....	....	....	1	....	1	1	2	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	6	19	.08
Osteo-Myelitis ✓	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	1	3	.01
Necrosis ✓	1	1	1	....	....	....	....	....	....	....	....	....	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	4	.02
Caries ✓ ✓	....	1	....	....	1	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	7	.03
Synovitis ✓ ✓	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	.01
Necrosis of Femur ✓ ✓	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.00
Ununited Fracture of Femur ✓ 152 ✓	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	1	1	.01
Abscess of Knee-Joint 153 ✓	1	....	....	....	1	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	.00
Disease of Spine 34 ✓	3	2	....	1	....	....	....	....	1	1	1	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5	12	.05
Total Dis. of Locomotory System	10	7	2	1	2	....	1	....	4	2	3	2	1	2	1	....	....	....	....	....	....	....	....	1	....	....	1	....	....	17	50	.21

Deaths in New York—Continued.

CAUSES OF DEATH.	MALES.																													
	NATIVITY.																													
	U.States	Foreign.	Colored.	Under 1 year.	1–	2–	3–	4–	Total under 5 yrs.	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100 and upward.	Tot. Males.
CLASS III—Continued.																														
ORDER 8. (INTEGUMENTARY SYSTEM.) ✓																														
Phlegmon 153	....	2	....	.....	....	....	....	....	.....	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	..	....	2
Abscess 153 ✓ ✓	8	8	....	4	1	....	....	....	5	2	..	..	1	1	1	1	2	1	..	1	..	1	..	..	..	..	..	..	....	16
Ottorrhœa 86 ✓	....	1	....	......	....	....	....	....	......	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	1
Ulcer 154 ✓	3	1	....	......	....	....	....	....	......	..	..	..	1	..	..	..	..	..	1	..	..	1	..	..	1	..	..	..	....	4
Tumor 50 ✓	.... ..	2	....	......	....	....	....	....	.....	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	....	2
Tumor (Fibro-Plastic) 50 ✓ ✓	1	....	....	......	....	....	....	....	.....	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	....	1
Gangrene of Leg 151 ✓	....	1	....	......	....	....	....	....	......	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	1
Total Diseases of Integumentary System.	12	15	....	4	1	....	....	....	5	2	..	2	2	1	2	2	2	1	1	1	..	3	1	..	2	..	..	..	....	27
Total Local Diseases.	3183	1483	68	1504	491	178	113	71	2357	164	71	73	139	156	208	237	217	211	201	161	165	121	98	48	26	9	3	1	....	4666
CLASS IV—DEVELOPMENTAL DISEASES.																														
ORDER 1. (CHILDREN.) ✓																														
Premature Birth 161 ✓	199	....	5	199	....	....	....	....	199	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	199
Preternatural Birth 159 ✓	8	....	....	8	....	....	....	....	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	8
Cyanosis 159 ✓	27	1	....	26	2	....	....	....	28	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	28
Spina Bifida 159 ✓ ✓	3	....	....	3	....	....	....	....	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	3
Other Malformations 151 ✓	35	....	....	33	1	....	....	1	35	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	35
Atalectasis Pulmonum 162 ✓ ✓	15	....	....	15	....	....	....	....	15	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	15
Teething 205	56	1	....	36	20	....	1	....	57	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	57
Prolapsus of Umblical Cord 161 ✓	1	....	....	1	....	....	....	....	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	1
Hemorrhage from Umblical Cord 162 ✓ ✓	4	....	....	4	....	....	....	....	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	4
Sclerema 160	....	....	....	......	....	....	....	....	......	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	....
Total Developmental Diseases of Children	348	2	5	325	23	....	1	1	350	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	350

CAUSES OF DEATH.	FEMALES.																														Total both Sexes.	Percentage of each Cause on Total.
	NATIVITY.		Colored.	Under 1 year.	1–	2–	3–	4–	Tot'l under 5 years.	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100 and upward.	Total Females.		
	U.States	Foreign.																														
CLASS III.—Continued. ORDER 8 (INTEGUMENTARY SYSTEM).																																
Phlegmon	....	1	..	.. ..	..	..	..	..	....	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	1	3	.01
Abscess	9	5	..	4	3	..	..	..	7	..	..	..	1	..	2	..	2	1	..	..	..	..	..	1	..	..	..	..	....	14	30	.13
Ottorrhœa	....	....	..	....	..	..	..	..	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	....	1	.00
Ulcer	....	1	..	....	..	..	..	..	....	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	....	1	5	.02
Tumor	1	1	..	....	1	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	....	2	4	.02
Tumor (Fibro-Plastic)	....	....	..	....	..	..	..	..	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	....	1	.00
Gangrene of Leg	1	....	..	....	..	..	..	..	....	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	....	1	2	.01
Total Diseases of Integumentary System	11	8	..	4	4	..	..	..	8	..	..	..	1	1	3	1	2	1	..	..	..	..	1	1	..	..	..	..	....	19	46	.19
Total Local Diseases	2586	1200	77	1163	414	163	80	59	1879	122	61	64	152	183	174	186	137	121	143	112	130	119	101	52	34	10	4	2	...	3686	8452	36.05
CLASS IV.—DEVELOPMENTAL DISEASES. ORDER 1. (CHILDREN.)																																
Premature Birth	150	....	4	150	..	..	..	..	150	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	150	349	1.49
Preternatural Birth	3	....	..	3	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	3	11	.05
Cyanosis	19	1	1	18	1	..	..	..	19	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	....	20	48	.20
Spina Bifida	2	....	..	2	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	2	5	.02
Other Malformations	23	....	..	23	..	..	..	..	23	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	23	58	.25
Atelectasis Pulmonum	13	....	..	13	..	..	..	..	13	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	13	28	.12
Teething 2 05	36	....	..	26	9	1	..	..	36	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	36	93	.40
Prolapsus of Umbilical Cord	....	....	..	....	..	..	..	..	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	....	1	.00
Hermorrhage from Umbilical Cord	4	1	..	4	1	..	..	..	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	5	9	.04
Sclerema	1	....	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	1	1	.00
Total Developmental Diseases of Children	251	2	5	240	11	1	..	..	252	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	....	253	603	2.57

Deaths in New York—Continued.

CAUSES OF DEATH.	MALES.																													
	NATIVITY.																													
	U.States	Foreign.	Colored.	Under 1 year.	1–	2–	3–	4–	Total under 5 yrs.	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100 and upward.	Total Males.
CLASS IV.—Continued.																														
ORDER 3. (AGE.) 164 ✓																														
Old Age	25	81	....	....	....	....	....	....	......	....	....	....	....	....	....	....	....	....	..	2	2	3	9	21	42	21	4	2	....	106
Senile Gangrene ✓ 151	2	6	....	....	....	....	....	....	......	....	....	....	....	....	....	....	....	....	2	..	1	2	2	..	..	..	..	1	....	8
Total Diseases of Old Age	27	87	...	....	....	...	....	...	......	....	....	....	....	....	....	...	....	....	2	2	3	5	11	21	42	21	4	3	....	114
ORDER 4. (NUTRITION.) ✓																														
Atrophy 205 ✓	72	2	....	70	2	....	....	....	72	....	1	....	....	....	....	....	....	....	1	..	..	..	..	..	..	..	..	..	....	74
Debility 305 ✓	161	66	4	138	10	....	....	1	149	1	2	2	4	2	5	5	6	4	2	8	9	8	11	6	2	1	..	..	....	227
Total Diseases of Nutrition,	233	68	4	208	12	....	....	1	221	1	3	2	4	2	5	5	6	4	3	8	9	8	11	6	2	1	..	..	....	301
Total Developm'tal Diseases	608	157	9	533	35	....	1	2	571	1	3	2	4	2	5	5	6	4	5	10	12	13	22	27	41	22	4	3	....	765

CAUSES OF DEATH.	FEMALES. Nativity. U. States.	Foreign.	Colored.	Under 1 year	1–	2–	3–	4–	Total under 5 years.	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100 and upward.	Total. Females.	Total both Sexes.	Percent. of each Cause on Total.
CLASS IV.—Continued.																																
ORDER 2. (WOMEN.)																																
Chlorosis. 58 ✓ ✓	1	1	....	......	..	..	..	..	......	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	2	2	.01
Puerperal Convulsions 148 ✓	16	25	2	......	..	..	..	..	......	..	..	7	14	7	6	5	2	..	..	..	..	..	..	..	..	..	..	..	....	41	41	.18
Flooding 144 ✓	9	28	1	......	..	..	..	..	......	..	..	1	2	10	8	6	4	3	..	3	..	..	..	..	..	..	..	..	....	37	37	.16
Miscarriage 143a ✓	2	5	....	......	..	..	..	..	......	..	..	2	..	..	1	4	..	..	..	..	..	..	..	..	..	..	..	..	....	7	7	.03
Malformation of Pelvis 157	....	1	....	......	..	..	..	..	......	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	1	1	.01
Puerperal Insanity 149 ✓	....	1	....	......	..	..	..	..	......	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	1	1	.00
Malignant Disease of Uterus 4b	....	1	....	......	..	..	..	..	......	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	....	1	1	.00
Childbirth 145 ✓	4	21	1	......	..	..	..	..	......	..	..	..	..	4	8	9	4	..	..	..	..	..	..	..	..	..	..	..	...	25	25	.11
Total Developmental Dis. of Women.	32	83	4	......	..	..	..	..	......	..	..	11	16	24	23	24	10	3	1	3	..	..	..	..	..	..	..	..	....	115	115	.49
ORDER 3. (AGE.)																																
Old age ✓	70	121	5	......	..	..	..	..	......	..	..	..	..	..	..	..	..	..	..	1	2	8	18	35	57	38	18	10	4	191	297	1.27
Senile Gangrene ✓	2	3	....	......	..	..	..	..	......	..	..	..	..	..	..	..	..	..	..	..	..	1	1	1	2	..	..	..	....	5	13	.05
Total Diseases of old Age.	72	124	5	......	..	..	..	..	......	..	..	..	..	..	..	..	..	..	..	1	2	9	19	36	59	38	18	10	4	196	310	1.32
ORDER 4. (NUTRITION.) ✓																																
Atrophy	67	....	....	64	2	1	..	..	67	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	67	141	.60
Debility ✓	183	81	4	151	3	5	1	1	161	1	..	2	6	6	6	7	4	7	3	2	10	15	24	8	1	..	..	1	....	264	491	2.09
Total Diseases of Nutrition.	250	81	4	215	5	6	1	1	228	1	..	2	6	6	6	7	4	7	3	2	10	15	24	8	1	..	..	1	....	331	632	2.69
Total Developmental Diseases.	605	290	18	455	16	7	1	1	480	1	....	13	22	30	30	31	14	10	4	6	12	24	43	44	60	38	18	11	4	895	1660	7.08

Deaths in New York—Continued.

CAUSES OF DEATH.	MALES.																													
	NATIVITY.																													
	United States.	Foreign.	Colored.	Under 1 year	1-	2-	3-	4-	Total under 5 years.	5-	10-	15-	20-	25-	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-	80-	85-	90-	95-	100 and upward.	Total Males.
CLASS V.																														
ORDER 1. (ACCIDENT AND NEGLIGENCE.)																														
Fractures and Contusions 201	44	82	2	3	1	....	....	2	6	6	5	7	15	12	11	20	10	9	4	7	4	6	2	..	..	2	..	..	....	126
Wounds 202	1	....	....	....	....	....	....	....	....	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	1
Wounds, Gunshot 183	3	3	....	1	....	....	....	1	2	..	..	..	3	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	....	6
Burns and Scalds 179	26	9	....	3	4	6	2	2	17	3	..	..	2	..	1	5	2	3	..	1	..	1	..	..	..	..	..	..	....	35
Poison, Accidental 177	6	3	....	3	....	1	....	....	4	..	..	..	..	1	2	1	..	1	..	..	..	..	..	..	..	..	..	..	....	9
Drowning 182	48	115	....	7	1	....	....	....	8	12	16	11	13	13	18	35	21	5	5	..	4	..	..	1	1	..	..	..	....	163
Suffocation and Asphyxia 180	32	9	....	28	....	1	....	....	29	..	..	1	1	1	4	..	2	..	2	..	..	..	..	..	1	..	..	..	....	41
Other Violent Deaths 202	1	....	....	1	....	....	....	....	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	1
Falls 185	41	61	2	....	3	2	5	2	12	9	4	6	12	2	9	13	8	10	6	4	5	1	1	..	..	..	..	..	....	102
Run over in Streets 188	27	35	....	....	....	1	1	1	3	11	9	4	5	5	4	7	3	2	1	1	2	3	1	1	..	..	..	..	....	62
Total Deaths by Accident and Negligence	229	317	4	46	9	11	8	8	82	41	34	30	51	34	49	82	46	30	18	13	15	11	4	2	2	2	..	..	....	546
ORDER 3. (MURDER AND MANSLAUGHTER)	12	12	....	4	....	....	....	....	4	..	2	1	2	7	..	2	1	2	2	1	..	..	..	..	..	..	..	..	....	24
ORDER 4. SUICIDE. (Inquest not finished)	....	1	....	....	....	....	....	....	....	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	....	1
Suicide by Cut, Stab	1	7	....	....	....	....	....	....	....	..	..	..	..	..	..	3	..	1	1	1	..	2	..	..	..	..	..	..	....	8
Suicide by Charcoal-gas	....	1	....	....	....	....	....	....	....	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	....	1
Suicide by Drowning	1	3	....	....	....	....	....	....	....	..	..	..	..	1	..	1	2	..	..	..	..	..	..	..	..	..	..	..	....	4
Suicide by Gunshot	7	19	....	....	....	....	....	....	....	..	..	1	4	5	6	6	1	3	..	..	..	..	..	..	..	..	..	..	....	26
Suicide by Hanging	....	7	....	....	....	....	....	....	....	..	..	..	..	..	..	..	3	1	1	1	1	..	..	..	..	..	..	..	....	7
Suicide by Jumping from height	....	1	....	....	....	....	....	....	....	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	1
Suicide by Poison	1	9	....	....	....	....	....	....	....	..	..	..	2	2	1	2	..	1	..	..	..	2	..	..	..	..	..	..	....	10
Total Deaths by Suicide 165-170	10	48	....	....	....	....	....	....	....	..	..	1	6	9	7	12	7	6	2	2	2	4	..	..	..	..	..	..	....	58

CAUSES OF DEATH.	FEMALES.																															
	NATIVITY.		Colored.	Under 1 year.	1–	2–	3–	4–	Total under 5 yrs.	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100 and upward.	Total Females.	Total both Sexes.	Percent'ge of each Cause on Total.
	U. S.	For'n.																														
CLASS V.—DEATHS BY VIOLENCE.																																
ORDER 1. (ACCIDENT AND NEGLIGENCE.)																																
Fractures and contusions	5	9	..	2	..	1	..	..	3	2	1	..	1	2	..	2	..	..	..	..	..	3	..	..	..	..	..	..	....	14	140	.60
Wounds	......	2	..	....	..	..	..	..	......	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	....	2	3	.01
Wounds, Gunshot	......	3	..	....	..	..	..	..	......	..	..	..	..	..	..	1	1	..	..	..	..	1	..	..	..	..	..	..	....	3	9	.04
Burns and Scalds	38	17	2	2	5	4	4	4	19	9	2	3	3	4	5	5	1	2	..	..	1	..	..	1	..	..	..	..	....	55	90	.39
Poison, Accidental	4	3	..	1	1	1	..	..	3	..	..	..	1	..	1	1	..	..	1	..	..	..	..	..	..	..	..	..	....	7	16	.07
Poison, by inhaling Chloroform	1	......	..	....	..	..	..	..	......	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	....	1	1	.00
Drowning	8	16	1	3	1	..	..	..	4	3	3	..	..	7	4	2	1	..	..	..	..	..	..	..	..	..	..	..	....	24	187	.80
Suffocation and Asphyxia	27	5	..	20	2	..	..	1	23	2	1	1	..	1	2	..	1	..	1	..	..	..	..	..	..	..	..	..	....	32	73	.32
Other Violent Deaths	......	......	..	....	..	..	..	..	......	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	....	1	.00
Falls	16	16	1	3	1	5	1	..	10	4	..	1	..	..	3	1	2	..	2	3	3	2	1	..	..	..	..	..	....	32	134	.57
Run Over in Streets	5	3	..	..	..	2	1	1	4	1	1	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	....	8	70	.31
Total Deaths by Accident and Negligence.	104	74	4	31	10	13	6	6	66	21	8	5	5	14	16	12	6	2	5	4	5	7	1	1	..	..	..	..	....	178	724	3.09
ORDER 3. (MURDER AND MANSLAUGHTER.)	5	3	..	2	..	..	..	..	2	..	..	1	1	3	1	..	..	..	..	..	..	..	..	..	..	..	..	..	....	8	32	.14
ORDER 4. SUICIDE. (Inquest not finished.)	......	..	..	....	..	..	..	..	......	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	....	1	.00
Suicide by Cut, Stab	1	......	..	....	..	..	..	..	......	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	....	1	9	.04
Suicide by Charcoal-gas	......	......	..	....	..	..	..	..	......	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	....	1	.00
Suicide by Drowning	......	......	..	....	..	..	..	..	......	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	....	4	.02
Suicide by Gunshot	....	......	..	....	..	..	..	..	......	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	....	26	.11
Suicide by Hanging	1	6	..	....	..	..	..	..	......	..	..	..	2	..	2	2	..	..	1	..	..	..	..	..	..	..	..	..	....	7	14	.06
Suicide by Jumping from Height	......	......	..	....	..	..	..	..	......	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	....	1	.00
Suicide by Poison	5	5	..	....	..	..	..	..	......	..	..	1	2	1	..	2	3	..	1	..	..	..	..	..	..	..	..	..	....	10	20	.08
Total Deaths by Suicide	7	11	..	....	..	..	..	..	......	..	..	1	4	1	3	4	3	..	2	..	..	..	..	..	..	..	..	..	....	18	76	.33

Deaths in New York—Continued.

CAUSES OF DEATH.	MALES.																												
	NATIVITY.		Colored.	Under 1 year	1–	2–	3–	4–	Total under 5 years.	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	95–	90–	95–	100 and upward.	Total Males.
	United States.	Foreign.																												
CLASS V—Continued.																														
ORDER 5. (EXECUTION).✓ Hanging.... ..202.......	1	2	....	....	..	..	..	..	....	....	....	....	....	1	....	1	1	....	....	....	....	....	..	..	..	..	..	..	....	3
Not specified or ill-defined ..5.	2	1	....	2	..	..	..	..	2	....	....	....	....	....	....	1	....	....	....	....	....	....	..	..	..	..	..	..	....	3
(Surgical Operation)...20..	......	2	....	....	..	..	..	..	....	....	....	....	....	....	1	....	....	1	....	....	....	....	..	..	..	..	..	..	....	2
Total Deaths by Violence.	254	382	4	52	9	11	8	8	88	41	36	32	59	51	57	98	55	39	22	16	17	15	4	2	2	2	....	....	....	636

CAUSES OF DEATH.	FEMALES.																														Total both sexes.	Percentage of each cause on Total.
	NATIVITY.		Colored.	Under 1 year.	1–	2–	3-	4-	Total under 5 years.	5–	10–	15–	20–	25–	30-	35-	40-	45-	50-	55-	60	65-	70-	75-	80-	85-	90-	95-	100 and upwards.	Total females.		
	United States.	Foreign.																														
CLASS V.—Continued.																																
ORDER 5. (EXECUTION.)																																
Hanging	....	....	....	....	....	....	....	....	....	....	....	....	....	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	....	3	.01
Not specified or ill-defined ...	1	3	....	1	....	....	....	....	1	....	....	....	....	....	..	3	..	..	..	..	..	..	..	..	..	..	..	..	....	4	7	.03
(Surgical Operation).........	2	1	....	....	....	....	....	....	....	....	....	....	....	..	..	2	..	1	..	..	..	..	..	..	..	..	..	..	....	3	5	.02
Total Deaths by Violence ..	119	92	4	34	10	13	6	6	69	21	8	7	10	18	20	21	9	3	7	4	5	7	1	1	....	....	....	....	....	211	847	3.61

Recapitulation.—Total Deaths by Classes—Percentages.

CAUSES OF DEATH.		Under 1 year.	1–	2–	3–	4–	Total under 5 years.	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100 and upward.	Total.	Percentage of each Class on Total.
CLASSES.																													
I. Zymotic	M.	1,393	677	252	183	108	2,613	186	44	46	94	98	87	87	54	66	50	52	41	26	24	6	8	5	1	...	..	6,888	29.38
	F.	1,244	638	270	135	89	2,376	176	35	57	90	91	97	94	59	50	35	39	29	25	20	14	6	6	1	...	..		
II. Constitutional.	M.	625	242	93	35	36	1,021	67	36	71	203	223	206	224	198	153	131	88	81	66	30	24	4	2	...	...	..	5,596	23.87
	F.	496	232	65	8	19	850	50	36	107	240	252	229	240	175	136	122	76	80	75	44	29	22	5	...	...	..		
III. Local.......	M.	1,504	491	178	113	71	2,357	164	71	73	139	156	208	237	217	211	201	161	165	121	98	48	26	9	3	1	..	8,452	36.05
	F.	1,163	414	163	80	59	1,879	122	61	64	152	183	174	186	137	121	143	112	130	119	101	52	34	10	4	2	..		
IV. Developmental	M.	533	35	....	1	2	571	1	3	2	4	2	5	5	6	4	5	10	12	13	22	27	44	22	4	3	..	1,660	7.08
	F.	455	16	7	1	1	480	1	....	13	22	30	30	31	14	10	4	6	12	24	43	44	60	38	18	11	4		
V. Violence	M.	52	9	11	8	8	88	41	36	32	59	51	57	98	55	39	22	16	17	15	4	2	2	2	...	...	..	847	3.64
	F.	34	10	13	6	6	69	21	8	7	10	18	20	21	9	3	7	4	5	7	1	1	..	...	...	...	..		
Total (by Sexes)	M.	4,107	1,454	534	340	215	6,650	459	190	224	499	530	563	651	530	473	409	327	316	241	178	107	84	40	8	4	....	12,483	.....
	F.	3,392	1,310	518	260	174	5,654	370	140	248	514	574	550	572	394	320	311	237	256	250	209	140	122	59	23	13	4	10,960	.....
Total of both Sexes ..		7,499	2,764	1052	600	389	12,304	829	330	472	1013	1104	1113	1223	924	793	720	564	572	491	387	247	206	99	31	17	4	23,443	....
Percentage on total mortality given by the deaths of both Sexes in each period of life.		31.99	11.79	4.49	2.56	1.66	52.48	3.54	1.41	2.01	4.32	4.71	4.75	5.22	3.94	3.38	3.07	2.41	2.44	2.09	1.65	1.05	.88	.42	.13	.08	.02	......	......

Total Deaths in each Week in the City of New York, by Ages, from October 6th, 1866, to September 28th, 1867.

WEEK ENDING.	Under 1 year.	1 to 2.	2 to 3.	3 to 4.	4 to 5.	Total under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 40.	40 to 60.	60 to 80.	80 and upward.	Total.
1866.														
Oct. 6.......	126	39	18	11	8	202	18	6	13	101	64	35	10	449
13.......	121	63	11	7	2	204	12	14	9	109	52	25	3	428
20.......	131	51	13	12	6	213	18	11	14	94	76	41	8	475
27......	123	40	16	2	4	185	9	9	10	85	74	29	8	409
Nov. 3.......	121	33	22	8	10	194	21	5	7	81	50	29	2	389
10.......	99	35	23	9	3	169	17	5	6	97	62	30	5	391
17.......	108	21	20	14	6	169	18	....	12	83	50	28	12	372
24.......	110	17	14	15	6	162	19	4	11	78	72	34	17	397
Dec. 1.......	116	33	20	20	12	201	15	5	14	87	61	41	8	432
8.......	107	32	19	13	7	178	19	5	5	87	49	34	8	385
15.......	106	38	20	12	12	188	15	9	6	97	65	47	6	433
22.......	87	37	23	11	12	170	17	6	10	86	53	29	7	378
29.......	88	31	24	11	14	168	17	6	10	85	69	24	5	384
1867.														
Jan. 5.......	111	40	32	8	9	200	17	1	13	101	77	48	6	463
12.......	120	42	21	17	7	207	26	7	5	88	57	28	16	434
19.......	95	40	28	16	8	187	18	6	12	99	68	36	10	436
26.......	100	29	18	13	10	170	24	5	7	94	60	37	6	403
Feb. 2.......	109	47	17	10	6	189	18	7	6	103	77	41	11	452
9.......	127	53	21	8	12	221	11	6	6	84	46	33	7	414
16.......	102	44	22	18	11	197	12	7	7	77	61	40	13	414
23.......	125	38	16	12	10	201	22	9	12	99	58	31	7	439
Mar. 2.......	115	42	26	12	12	207	14	5	7	85	57	38	10	423
9.......	121	29	25	11	7	193	16	3	8	76	49	24	6	375
16......	109	27	16	11	6	169	12	12	6	86	66	34	5	390
23.......	123	45	17	12	9	206	14	6	7	86	69	33	12	433
30.......	98	45	17	12	3	175	11	8	11	102	46	44	11	408
April 6.......	123	39	16	10	9	197	21	2	11	83	54	42	9	419
13.......	114	35	15	18	9	191	15	7	8	92	55	34	5	407
20.......	119	47	1	14	9	203	12	9	7	79	59	28	9	406
27.......	120	37	26	15	8	206	16	5	13	71	49	41	4	405
May 4.......	124	37	23	10	6	200	21	13	7	80	63	36	9	438
11.......	118	40	14	7	9	188	21	8	9	77	66	38	9	416
18.......	116	45	16	11	1	189	10	6	4	75	52	43	6	385
25.......	94	33	19	16	6	168	16	3	8	72	51	38	5	361
June 1.......	106	42	20	10	5	183	14	6	3	84	61	38	4	393
8.......	95	42	21	11	11	180	19	12	14	83	44	26	3	381
15.......	107	40	17	15	8	187	20	5	8	81	40	21	10	372
22.......	102	43	19	14	7	185	15	8	2	70	31	22	6	339
29.......	126	41	23	17	10	217	10	8	11	85	42	34	2	409
July 6.......	165	71	31	8	9	284	18	5	8	78	41	34	4	472
13.......	225	95	25	10	4	359	18	8	9	57	42	23	9	525
20.......	259	91	24	14	6	394	18	9	8	67	59	22	5	582
27.......	336	102	20	15	4	477	17	5	10	92	53	16	7	677
Aug. 3.......	310	107	21	7	13	458	9	3	5	76	63	28	5	647
10.......	297	115	28	12	5	457	13	13	11	112	73	26	3	708
17.......	289	94	13	9	8	413	18	6	13	96	58	31	5	640
24.......	232	122	31	7	4	396	9	4	10	86	56	44	3	608
31.......	228	119	27	7	9	390	11	6	14	73	37	44	4	579
Sept. 7.......	224	106	19	10	4	363	16	4	8	102	44	20	4	561
14.......	191	81	21	10	6	309	11	6	9	88	55	32	2	512
21.......	217	98	21	7	7	350	13	8	11	80	69	33	4	568
28.......	150	66	17	9	7	249	10	5	9	79	53	28	4	437
Total in year..	7,485	2,779	1,060	598	396	12,318	821	341	464	4,478	2,958	1,715	359	23,443

NOTES ON THE CHIEF CAUSES OF DEATH.

In the preceding abstract of causes of death, and the ages of the decedents, it appears that the various diseases and other causes of mortality, the past year, amounted to 210. Whatever is properly certified as the *chief cause* of death, in any case, is registered accordingly, and, in the yearly abstract, enters into the statistical statement. But most of the certificates of death furnished to this Bureau by physicians, state the co-existence of a remote or a complicating cause, and also so mention the time of its continuance, or the circumstances which attend it, that its relation to the sickness and death is not a matter of doubt. For the purposes of the sanitary government, medical science, and the accuracy and completeness of public records of death, these tributary and collateral causes are scarcely less important than the statement of the chief cause. But in the published abstracts the chief cause alone is given. Only such names as are reasonable and well known in medical science are registered, for whoever gives in his certificate an unmeaning name to the cause of a death, thereby evinces evidence of incapacity to judge of the true cause of the fatal event. And in such a case, means are adopted, either by special investigation or by a reference to the coroners, to ascertain what disease it was that destroyed life.

Fortunately for the sanitary uses of the records of death, which are registered in accordance with the system of nomenclature and classification now employed by vital statisticians, the names of fatal diseases have come to be associated in no small degree with their productive sources; so that, by general usage, these names do, in some measure, guide to the investigation of the actual or the local causes. Thus, *cholera infantum*, which is a name that utterly fails to indicate the anatomical and pathological effects of the malady itself, has become so associated with our ideas of the external physical conditions, viz: impure air, high temperature, and faulty nourishment, combined,—that this term answers a practical purpose in the search for local and special causes of insalubrity.

Every disease that is characterized by inflammation or any morbid change in the tissues of a particular organ or part of the human body, has, or should have, a specific name and definition that can distinguish it from every other disease. These inflammatory and organic diseases, with such specific appellations, comprise nearly half of all the causes of death we register in the metropolis. The name may not, however, be written out in full, but it will be found on the original certificate and in the public registers, in the words that are generally accepted by the medical profession. For example, *Tubercula Phthisis pulmonalis*, or consumption, is registered simply as "phthisis pulmonalis," and in the weekly abstracts, which are also permanently recorded, it is registered in the tubercular group of diseases, and in the brief term that appears in the first register. With the progress of exact pathological knowledge, there continues to be an increasing degree of definiteness in the name of various diseases, and in the specific distinctions that distinguish them. But it is an interesting and suggestive fact, that with few and equivocal exceptions, the zymotic diseases have, by common and spontaneous consent and choice in the medical profession, been called by names that indicate no one of the essential changes which the diseased action produces in the tissues and fluids of the body. The most that can be claimed for these names (of the zymotics) is, that they serve as definitions that prevent confusion of terms. The names "diphtheria," "small-pox," "epidemic cerebro-spinal meningitis," and "pyæmia," though they attempt to describe some one of the pathological *results* of disease, do not by any means succeed in defining the morbid process by which are engendered the changes which are indicated by their respective names. The group of miasmatic diseases, which comprises the greater part of the zymotic class, are believed to depend mainly upon specific causes that operate by incubative increase and development of a virus or miasm.

Medical science continues to confess the imperfections of its best classifications of diseases and their causes, nevertheless it is every year contributing additional means for discrimination and prevention of some of the most destructive and incurable of them. In concluding each annual report of this Bureau, the chief of these causes of mortality are noticed. In the report for 1866 the following causes of death were particularly noticed with reference to some of their preventable sources: Small-pox, scarlatina, diphtheria, typhus and typhoid fevers, erysipelas, and puerperal fever, the diarrhœal maladies, diseases of the respiratory organs; together with violent deaths. This year we add notes upon a few points that seem to be most important to sanitary science, and to the practical work of the Board of Health.

SMALL-POX.

It is shown in the preceding abstract, at the head of the list of diseases, that only nineteen deaths occurred from small-pox in

New York, and but two in Brooklyn. This is the least number of fatal cases of small-pox that has occurred since 1829,* and it includes what until 1859 was not included, all the cases that were sent from the ships in Quarantine. *Six cases* only, died *in the city* and twelve at the Small-pox Hospital on Blackwell's Island. That institution receives all cases which are sent from shipboard and from emigrant institutions, as well as patients from the city. The total number of patients in this pest-hospital, and the nativity and social condition of each, will be seen by referring to the notes on Public Institutions, herewith submitted.

During the year 1867 twenty-eight ships arrived at Quarantine, having small-pox on board; and in London, Liverpool, and several other ports, this contagion was unusually prevalent. That so few vessels arrived with this disease must be attributed mainly to the fact that great care is now used in embarking emigrant passen-

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* The course of small-pox in New York, as in all other populous places, when studied in connection with the records of vaccination, and with the records of mortality in any ten years that preceded *Jenner's* discovery, will convincingly show what amazing protection is given by vaccination. We cannot in this place present the details of the course pursued by the dreaded disease and its preventive antidote in New York. But the following is an accurate record of the deaths by small-pox from the year 1804 to the present time. Vaccination was introduced in New York by a friend and correspondent of the great *Jenner*, Dr. Valentine Seaman, in the year 1800; and, in the first "Bill of Mortality" in this city (December, 1802) 108 deaths by small-pox were recorded, and with that record, which was given to the medical paper in the city, Mr. Pintard, the registrar, sent a note in these words: "Of the disorders with which helpless infancy is afflicted, *fits* appear to be more fatal *even than small-pox, the ravages of which, thank Heaven, will shortly be erased from the direful catalogue of human maladies.*

Deaths by Small-pox in the City of New York in the 64 *years ending* 1867.

Year........	1804.	1805.	1806.	1807.	1808.	1809.	1810.	1811.	1812.	1813.	1814.	1815.	1816.	1817.	1818.	1819.
No. of cases..	169	62	48	29	62	66	4	117	21	2	2	94	179	14	19	....
Year........	1820.	1821.	1822.	1823.	1824.	1825.	1826.	1827.	1828.	1829.	1830.	1831.	1832.	1833.	1834.	1835
No. of cases...	....	....	....	18	394	40	58	149	93	16	176	224	89	25	233	351
Year........	1836.	1837.	1838.	1839.	1840.	1841.	1842.	1843.	1844.	1845.	1846.	1847.	1848.	1849.	1850.	1851.
No. of cases...	173	164	91	68	232	200	181	117	21	425	141	53	544	326	231	562
Year........	1852.	1853.	1854.	1855.	1856.	1857.	1858.	1859.	1860.	1861.	1862.	1863.	1864.	1865.	1866.	1867.
No. of cases...	497	656	611	101	388	423	492	60	274	599	268	73	382	664	36	19

gers at British ports, every arm being examined for the *cicatricial* evidence of vaccination. The good results of immediate domestic quarantine, and the disinfection of the clothing of the sick (by boiling or burning) have been abundantly witnessed in the numerous cases of varioloid and about one hundred cases of variola that have occurred in the city during the year. And we would here state that in reply to the following inquiry made, of prominent physicians, in eight hundred villages and cities in the State of New York, in the month of October this year, not an affirmative answer has been received, though more than one hundred of the correspondents have replied very fully upon all other points of inquiry: "Have any cases of small-pox in your district, during the past twelve months, been traced to New York or Brooklyn? If so, please give date and circumstances."

How long this fortunate "passover" from this most disgusting contagion may continue can be predicted only by those who know how completely the infant population, in the cities and in the country, is brought under the protection of Jenner's immortal boon. Ceaseless vigilance by parents, family physicians and the sanitary authorities, alone can ensure such timely and proper application of this great safeguard as will ensure the continuance of the happy experience of this most favored year.*

The proofs of the protective power of genuine vaccination continue to be as decisive in character as when Jenner announced, in 1798, that this discovery would exterminate small-pox, if the application of the harmless antidote were made universal.

MEASLES, SCARLATINA AND DIPHTHERIA.

These three foes of the child-population, in the two cities of the Sanitary District, killed 2,175 persons. The following table shows the chronological course of these diseases in the year:

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* The experience of the volunteer forces in the late war of the rebellion was unexampled in magnitude, and so conclusive in results, especially upon the questions relating to the protective virtue of good vaccination, the rules for avoidance of spurious vaccination, and the real sources of impure inoculation, that the writer has recently prepared, by request of the United States Sanitary Commission, a resumé of evidence upon these practical questions. It is published in Vol. I of the Commission's *Sanitary Memoirs of the War,* Hurd & Houghton, New York, 1867. The facts and results of that inquiry in the late war will be practically useful to Boards of Health, for the observations were made upon a vast scale.

Mortality caused by Measles, Scarlatina and Diphtheria.

IN THE WEEK ENDING.	NEW YORK. TOTAL NUMBER OF DEATHS BY				BROOKLYN. TOTAL NUMBER OF DEATHS BY			
	Measles.	Scarlatina.	Diphtheria.	Total by the three diseases.	Measles.	Scarlatina.	Diphtheria.	Total by the three diseases.
October 6, 1866	.....	11	5	16	1	1	4	6
do 13, do	.....	6	10	16	.....	2	1	3
do 20, do	1	9	7	17	.....	1	4	5
do 27, do	.....	8	7	15	.....	5	1	6
November 3, do	.....	16	7	23	1	4	2	7
do 10, do	.....	12	7	19	.....	5	5	10
do 17, do	.....	14	6	20	.....	7	6	13
do 24, do	.....	21	5	26	.....	6	1	7
December 1, do	.....	28	8	36	.....	10	2	12
do 8, do	.....	26	12	38	.....	9	1	10
do 15, do	1	21	10	32	.....	5	1	6
do 22, do	.....	23	5	28	.....	6	4	10
do 29, do	3	34	6	43	.....	8	3	11
January 5, 1867	3	29	4	36	1	12	4	17
do 12, do	6	35	2	43	.....	13	1	14
do 19, do	1	26	9	36	.....	7	2	9
do 26, do	5	24	10	39	2	9	3	14
February 2, do	3	13	5	21	2	9	2	13
do 9, do	3	24	2	29	2	7	3	12
do 16, do	2	21	10	33	2	6	1	9
do 23, do	8	22	4	34	3	7	.....	10
March 2, do	1	26	6	33	6	10	1	17
do 9, do	3	15	9	27	2	6	2	10
do 16, do	6	13	9	28	6	3	.....	9
do 23, do	6	19	8	33	5	5	6	16
do 30, do	7	10	9	26	4	10	3	17
April 6, do	10	17	3	30	4	7	3	14
do 13, do	13	16	9	38	8	9	1	18
do 20, do	16	14	6	36	5	2	1	8
do 27, do	16	21	2	39	6	6	2	14
May 4, do	14	19	8	41	10	7	2	19
do 11, do	23	17	2	42	11	8	2	21
do 18, do	16	14	3	33	5	7	.....	12
do 25, do	19	12	5	36	3	11	.....	14
June 1, do	15	15	5	35	6	11	1	18
do 8, do	14	15	6	35	6	10	.....	16
do 15, do	26	13	4	43	4	9	1	14
do 22, do	20	12	1	33	3	14	1	18
do 29, do	26	9	2	37	4	13	2	19
July 6, do	31	17	2	50	4	21	.....	25
do 13, do	22	11	5	38	5	13	.....	18
do 20, do	25	9	3	37	4	7	1	12
do 27, do	24	7	4	35	4	13	1	18
August 3, do	22	6	7	35	8	3	3	14
do 10, do	15	8	3	26	5	5	3	13
do 17, do	13	12	6	31	3	8	1	12
do 24, do	5	4	3	12	3	6	2	11
do 31, do	5	7	5	17	2	5	1	8
September 7, do	7	2	4	13	3	2	2	7
do 14, do	3	2	2	7	1	5	3	9
do 21, do	2	1	5	8	1	4	1	6
do 28, do	1	3	4	8	1	1	.....	2
Total	462	789	291	1,542	156	380	97	633

The course of the scarlatina epidemic is seen in a series of curves upon the statistical diagrams. But the attempts to master all the laws and causes that govern the epidemic prevalence of this subtle infection reached only partial results. As a persistent and obstinate foe scarlatina is more to be dreaded than Asiatic cholera. And it would be truly fortunate if definite and positive prophylactic means could be applied to extinguish or completely control it. Possibly an antidote may yet be found that will be scarcely less effectual than that which the great Jenner has given to prevent small-pox; but, until that much wished-for day shall come, there can be no plainer duty than that sanitary authorities and families shall enforce the most thorough cleansing, ventilation, and the immediate disinfection of all clothing and infected things by boiling or other adequate means. From the commencement of the epidemic prevalence of scarlatina, early in the summer of 1866 until now, it has been an invariable rule of this Bureau that the clerk who issues the official burial permit shall, in every death by this infection, request the messenger who bears the permit, to inform the family that it is the wish of the Board of Health that the clothing of the deceased shall be immediately disinfected by boiling, and that domestic ventilation and cleansing be enforced in the house. The official order of Metropolitan Board of Health declaring scarlatina to be a contagious disease, within the meaning of the Health Act (section 18 of the Act, and sections 19 to 30, inclusive, of the Health Ordinances, 1867), constitutes an important epoch in the history of sanitary regulations against contagious diseases. Though the object of this action of the Board is simply to mitigate and somewhat limit the fatality and the prevalence of this pest of childhood, it may yet prove to be an important step toward the general control of this disease as an epidemic. The latter result seems distant and doubtful, but the object actually aimed at is neither uncertain nor unworthy the labor it costs. It has the hearty approbation of physicians and the people.

Perhaps no better testimony to the enlightened and advanced hygienic views of the medical profession in the Metropolitan District could be adduced—certainly no better proof of hearty co-operation and good will need be asked—than has been spontaneously given in the prompt and cheerful compliance which physicians now render to the requirement of the authorities for the immediate report of the cases of scarlatina, measles, and diphtheria. Aside from the first great end sought in this class of reports concerning residence, name and surroundings of the sick and the dead, an equally important and ultimate end may, ere long, be reached by this auspicious beginning of the *Registration of Diseases.* The craving desire of all true physicians that the history of epidemic and infectious diseases should be studied upon a broad basis, and that epidemiology should be brought up to the standard of the exact physical sciences, can be attained in no other way than by cordial and universal co-operation with the Boards of Health in such efforts for registration of the facts relating to sick, and to the circumstances of prevalent diseases.

TYPHUS AND TYPHOID FEVER.

The one hundred and ninety-nine fatal cases of typhus fever in New York, and the twenty-two in Brooklyn, have each an important history, and each case taught a practically useful lesson in hygiene. An offspring of personal and domestic filthiness, darkness, stagnant foulness of air, and famine, typhus perpetuates its infective virus wherever its germs find a lodgment amidst any such surroundings as those that first engendered it. The circumstances attending a number of almost explosive outbreaks of this disease were noticed in our records of the first two quarters of the year. The severe and very close and snowy winter so shut up the poorer classes of city inhabitants in their dwellings, that the malignant outbreaks and rapid diffusion of this fever threatened much harm to the tenant population.

The four hundred and four deaths by the enteric of typhoid fever in New York, and the one hundred and fifty-nine in Brooklyn served, in a general way, and not unfrequently in a very particular manner, to point out local sources of unhealthfulness, and these mostly, in respect of drainage and the proper care of excremental filth. The details upon this subject need not be recited here, for they are invariably associated with the evils that have most required the investigation of Mr. Worthen, the Sanitary Engineer.

In many respects the typhoid fever districts have been found to be co-incident with the "cholera-fields" of 1866, and the previous visitations of that epidemic. And the present state of exact knowledge regarding the localizing conditions that favor the prevalence of cholera, at least warrants this statement, to wit, that wherever this fever has become endemic in the Metropolitan District, there would cholera find soil and surroundings adapted to promote its propagation.

The medical profession and the non-professional public have a deep interest in the practical results of a faithful enforcement of the cleansing and disinfection which the Board of Health has ordered, these several monhts past, wherever filth-disease prevails; and, as the city sewerage system becomes more and more generally extended, it will be fortunate if the sewers and their myriad connections do not become vast ganglia of hidden and fever-breeding cesspools. This typhoid disease, in a crowded city, where the water-closet and sewer system prevails for removing the excremental outflowings of the population, requires skillful guarding; for, as in the case of Prince Albert, who died of it at Windsor Castle, the existence of the fever infection, in a sewer that receives the excrement of fever patients in a low and distant quarter of the town, will communicate its fatal poison to residents of a palace who chance, in their walks or visits, to pass within the range of the contaminated atmosphere. Unfortunately this has been the fate of members of several affluent families that were healthfully domiciled in or near the metropolis.

There are some facts worthy of notice in regard to the increasing prevalence of *typhoid* fever, and the gradual decrease of typhus or *ship* fever in the fifteen years past. The statistics of deaths by these fevers in New York are as follows:

Mortality by Typhus Fever and by Typhoid Fever in New York in the Twenty Years ending in 1867.

Year.	Typhus.	Typhoid.	Total number of Deaths by all Causes.
1848	720	223	15,919
1849	415	187	23,773
1850	396	76	16,978
1851	977	125	22,024
1852	662	96	21,601
1853	404	137	22,702
1854	390	136	28,568
1855	439	139	23,402
1856	227	133	21,102
1857	171	141	21,775
1858	126	176	22,196
1859	169	206	21,645
1860	198	212	22,710

Year.	Typhus.	Typhoid.	Total number of Deaths by all Causes.
1861	190	232	22,117
1862	136	404	21,244
1863	420	531	25,196
1864	764	661	25,645
1865	501	573	24,843
1866 (nine months)	371	362	21,206
1867	199	404	23,443
Total	7,875	5,154	448,089

ERYSIPELAS, AND PUERPERAL FEVER.

During the autumn of 1866 there were numerous fatal cases of each of these diseases, and, as regards the latter malady, there was no little anxiety among thoughtful obstetricians in the down-town districts where it most prevailed. In the past twelve months there have been seventy-nine fatal cases of childbed fever, and one hundred and sixteen of erysipelas, the latter mostly in hospitals or in very filthy and crowded localities. The fearfully positive teachings of medical experience in regard to the infectious and readily portable nature of puerperal fever, and in regard to the interchangeable nature of this fever-poison and erysipelas, have induced in all well-informed practioners of obstetrics in those two cities a very great degree of caution and conscientious effort to avoid all the causes of this destroyer of mothers at the period when the sacrifice of maternal life is most lamented. Public gratitude is due to the teachers and practitioners of obstetrics in the metropolis, for the conscientious and persistent manner in which they have, for many years, maintained and practically obeyed this principle. Physicians and well-informed families in these two cities prudently regard *Puerperal Fever as a Domestic Pestilence.**

PYÆMIA AND SEPTICÆMIA.

That there should have been only sixty cases of pyæmia in the two cities, and in a hospital population of nearly 20,000 patients of all kinds, might seem to be a matter for congratulation. But, when we consider that, in a majority of instances, this destructive zymosis is engendered by foul air within crowded wards, and by the inherent defects of hospital construction and ventilation, this record, like that of fatal erysipelas, points specifically to unsanitary circumstances connected with the existing hospitals. Besides these sixty deaths by pyæmia, there were nineteen by osteo-myelitis, which previous to the recent advances in exact surgical pathology, would have been recorded under the former name, or under the name of "surgical fever." *

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* This is the title of a most valuable Essay upon this subject, by Dr. Oliver Wendell Holmes, who in this class of studies has proved that a true poet can be a great physician.

The Diarrhœal Diseases.

The total quantity of diarrhœal disease in these cities, week by week, and month by month, and year by year, indicates with a kind of mathematical and chemical certainty, the total death pressure of putrescent defilement of the atmosphere in the sickly districts. The total number of deaths by diarrhœal diseases, of one kind and another, in the twelve months was 4,404. Asiatic cholera caused only one hundred and one of these deaths. The following summary will best exhibit the course of the diarrhœal diseases in the six months of the warm season in 1866 and 1867, respectively :

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* No other circumstance than this relating to the zymotic nature and collateral causes of pyæmia and putrefactive inflammation of injured bones, could more forcibly illustrate the practical relations which hygiene bears to the success of surgery and of hospital care. And it is a fact, full of significance, that the careful researches by which MM. Jules Roux, Vallette, and Larrey, in Europe, and Dr. J. A. Lidell in America, studying in the military hospitals of the recent great wars, have proved that the chief and worst of the causes concerned in these dreadful calamities which befall the wounded in hospital wards, is the conjoined operation of a foul atmosphere and a putrefactive zymosis. The very first result of the scientific researches of Dr. Lidell and his army confrères in this line of histological and pathological inquiry, has been to arouse the profound attention of all good surgeons and the medical officers of hospitals, and to lead them to guard their surgical patients, when suffering amputation or fractures, and to protect their hospital-wards against pyæmia infections and against the zymotic and destructive results of bone inflammations or osteomyelitis. Though these scientific inquiries may seem to lie somewhat beyond the range of such sanitary observations as Boards of Health require, they actually are very important matters for sanitary officers to know; for the clearest demonstration of sanitary principles, likewise some of the most urgent necessities for the application of them, are these very cases in which science, in its highest researches, discovers that unhygienic conditions, rather than inevitable fate, is chargeable with the loss of many precious lives in hospitals and the chambers where medicine and surgery are often worsted in an unequal conflict with the zymotic infections of a polluted atmosphere and the defiled surroundings of the suffering patients. As Florence Nightingale has well said, "The most delicate test of sanitary conditions in hospitals is afforded by the progress and termination of *surgical cases* after operation, together with the complications which they present."

Diarrhœal Diseases in 1866 *and* 1867.

	NEW YORK.								BROOKLYN.							
	Asiatic cholera.		Cholera infantum.		Other diarrhœal diseases.		Total.		Asiatic cholera.		Cholera infantum.		Other diarrhœal diseases.		Total.	
	1866	1867	1866	1867	1866	1867	1866	1867	1866	1867	1866	1867	1866	1867	1866	1867
1st week in May	1	....	....	2	13	16	14	18	....	....	....	1	3	4	3	5
2d do	....	....	3	....	16	15	19	15	....	....	2	1	2	2	4	3
3d do	....	....	3	2	15	15	18	17	....	....	1	....	....	5	1	5
4th do	....	....	3	1	17	13	20	14	....	....	....	1	1	3	1	4
1st week in June	....	1	....	2	12	10	12	13	....	....	3	3	3	2	6	5
2d do	2	....	1	3	15	11	18	14	....	....	2	....	2	2	4	2
3d do	6	....	6	4	24	13	36	17	....	....	3	1	2	3	5	4
4th do	4	....	13	12	21	12	38	24	....	....	5	4	5	3	10	7
5th do	1	....	14	23	45	20	60	43	....	....	16	10	11	6	27	16
1st week in July	3	....	61	38	49	29	113	67	1	1	45	49	5	18	51	68
2d do	11	1	172	84	73	56	256	141	9	1	76	67	22	13	107	81
3d do	11	....	278	138	164	58	453	196	22	....	122	75	32	21	176	96
4th do	48	....	176	176	121	91	345	267	41	....	72	72	26	16	139	88
1st week in Aug.	239	3	144	163	135	89	518	255	68	....	73	83	30	20	171	103
2d do	250	6	133	150	135	98	518	254	108	1	61	67	29	21	198	89
3d do	145	4	108	129	134	96	387	229	89	....	57	77	36	25	182	102
4th do	114	3	122	129	117	81	353	213	54	....	43	54	28	25	125	79
5th do	50	1	79	115	89	68	218	184	21	....	37	61	23	21	81	82
1st week in Sep.	50	2	69	77	95	93	214	172	24	....	32	47	32	27	88	74
2d do	67	4	51	71	99	68	217	143	10	....	37	35	26	18	73	53
3d do	54	1	55	60	87	72	196	133	12	....	25	23	24	21	61	44
4th do	38	....	42	26	52	49	132	75	11	1	22	16	21	17	54	34
Total	1,094	26	1,533	1,405	1,528	1,073	4,155	2,504	470	4	734	747	363	293	1,567	1,044

Having, in other sections of this report, presented the leading facts concerning the common diarrhœal disorders, it only remains now to notice the records of cholera as it appeared in New York during the past summer. The bare statistics of the deaths by this scourge, read as follows :

Abstract of the Records of fatal cases of cholera in the Metropolitan district, (exclusive of Quarantine) during the nine months ending October 1st, 1867.

DATE OF DEATH, 1867.	Residence or place.*	Ages of deceased.	Sex.	Social condition.	Occupation	Nativity.	Time from attack till death.	No. of fatal cases of cholera in same street in 1866.
May 20..........	328 East 34th street........	38 years..............	Female	Married	....	Ireland................	14 hours.....	
July 6..........	157 Mott street............	31 years 6 months......	Male........	Married	Engineer........	Ireland................	48 hours.....	15
July 9..........	45 Baxter street...........	35 years	Female	Married.....	Housekeeper....	Ireland................	29 hours.....	35
July 27..........	Bellevue Hospital.........	49 years	Female	Widow	Domestic........	Ireland................	....	33
July 31..........	456 West 19th street.......	34 years 1 month 20 days	Male........	Married	Iron moulder....	Ireland................	48 hours.....	1
August 1........	Bellevue Hospital..........	29 years..............	Female	Married	Housekeeper....	Ireland................	3 days	33
August 2........	171 Mulberry street........	51 years..............	Female	Married	....	Ireland................	12 hours.....	67
August 5........	351 Greenwich street......	28 years..............	Female	Married	....	Germany	26 hours.....	10
August 6........	54 Vandam street..........	35 years..............	Male........	Single	Drug clerk......	Goldsborough, N. C....	14 hours.....	
August 6........	143 East 47th street........	28 years..............	Male........	Single	Clerk	Virginia...............	10 hours.....	
August 8........	10 Washington street......	40 years..............	Female	Married.....	Housekeeper....	Ireland................	36 hours.....	17
August 8........	202 Mott street	3 years 8 months	Female	Single.......	....	New York............	14 hours.....	15
August 9........	128 Willett street..........	1 year 3 months.......	Female	Single.......	....	Germany..............	....	1
August 12........	Bellevue Hospital..........	32 years..............	Female	Married	Domestic........	Germany..............	2 days	33
August 12........	413 West 16th street.......	44 years	Female	Married.....	Housekeeper	Ireland................	24 hours.....	3
August 13........	158 Stanton street..........	38 years	Female	Married	....	Germany..............	14 days	
August 16........	369 6th avenue...........	31 years	Male........	Single	Ice-cream maker	France................	36 hours.....	1
August 17........	Bellevue Hospital..........	26 years..............	Male........	Married	Dock laborer....	Ireland................	2 days.......	33
August 18........	346 7th avenue............	51 years..............	Female	Married	Housekeeper....	Ireland................	3 days.......	1
August 19........	Bellevue Hospital..........	40 years..............	Male........	Single.......	Bookkeeper	Massachusetts	....	33
August 26........	210 Sullivan street	23 years..............	Male........	Single.......	Groom	Ireland................	50 hours.....	3
September 1.....	370 9th street..............	1 year 6 months	Female	Single	....	New York............	12 hours.....	1
September 3	255 West 39th street.......	7 years 2 months......	Female	Single	....	New York............	11 hours.....	3
September 8.....	255 West 39th street.......	45 years	Male........	Married	Shoemaker	Germany..............	2 days.......	3
September 10.....	255 West 39th street.......	3 years 6 months	Female	Single	....	New York............	3 days	3
September 12.....	Below 9th ave., 40th street..	45 years 7 months 4 days	Female	Married	Domestic........	Ireland................	14 hours.....	4
September 18.....	610 East 12th street........	70 years..............	Female	Widow	Housekeeper....	Ireland................	10 hours.....	2
				CHOLERA IN BROOKLYN.				
July 5..........	Congress street............	15 years	Female	Single.......	....	United States..........	10 hours.....	9 cases.
July 7..........	237 Gold street............	40 years	Female	Single.......	....	Ireland................	4 days.......	13 cases.
July 15..........	Gravesend, K. C...........	43 years..............	Male........	....	....	Belgium...............	....	
August 3........	Church street..............	6 years	Female	Single.......	....	United States..........	....	5 cases.
September 23.....	L. I. College Hospital	45 years........	Female	Married	Servant	Ireland................	12 hours.....	

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* The map of the cholera and diarrhœal fields presents the exact position of the several houses in which cholera proved fatal. The symbol, for 1866, is a red triangle.

As cholera did not gain an epidemic foothold in any portion of the Metropolitan District, except in a single square in the city of New York, we will not burden this report with the details relating to the several individual cases, and to the local circumstances that surrounded them. But these details will be found complete in the special report upon the present epidemic, now nearly ready for the use of the Board. The notes submitted a year ago, upon cholera as it had appeared during the summer and autumn of 1866, have made it desirable that the map of the "cholera fields" should be completed for the consecutive years 1866 and 1867. Accordingly, we have re-examined the history and local circumstances of every fatal case of cholera that has been reported within the limits of the city proper during these two years. The personal records of each victim of cholera who died in hospital has been so ascertained as to enable us to designate the position and character of the house whence each such patient was conveyed away to die. Having visited all the localities in which cholera has occurred in New York these two past seasons, as well as those in which two previous epidemics prevailed, and, in the course of these inquiries, having seen abundant evidence of the existence and importance of the local conditions that have prepared the way and furnished a congenial soil for the propagation of this exotic pestilence, we beg leave now to submit this map in evidence, as an important part of the sanitary records of cholera in this last visitation.*

The Cholera and Diarrhœal Fields.—In the preceding table, exhibiting the chronological course and records of the diarrhœal diseases, it was seen that in the corresponding six months, ending Oct. 1, in 1866 and 1867, the totality of deaths by these disorders—including cholera—amounted to 4,105 in the former, and 2,504 in the latter, in the city of New York; and in Brooklyn, to 1,941 deaths in the former season, and 1,052 in the latter. It further appears, that, by excluding the cholera mortality from these totals, we find a gain of 633 fewer deaths by the ordinary diarrhœal disorders, the last year in New York, and 380 lives saved in like manner in Brooklyn. The total gain to life appears, therefore, so far as this kind of mortality is concerned, as being,

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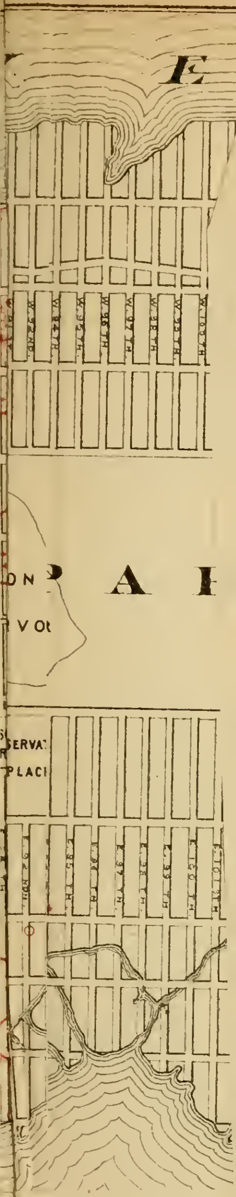
* The map here presented will be found well explained by referring to the notes at the left corner, bottom, and by reading the pages on *Comparative Unhealthfulness of the Different Wards*. The reader should also refer to the Sanitary Engineer's report in a subsequent part of this Report.



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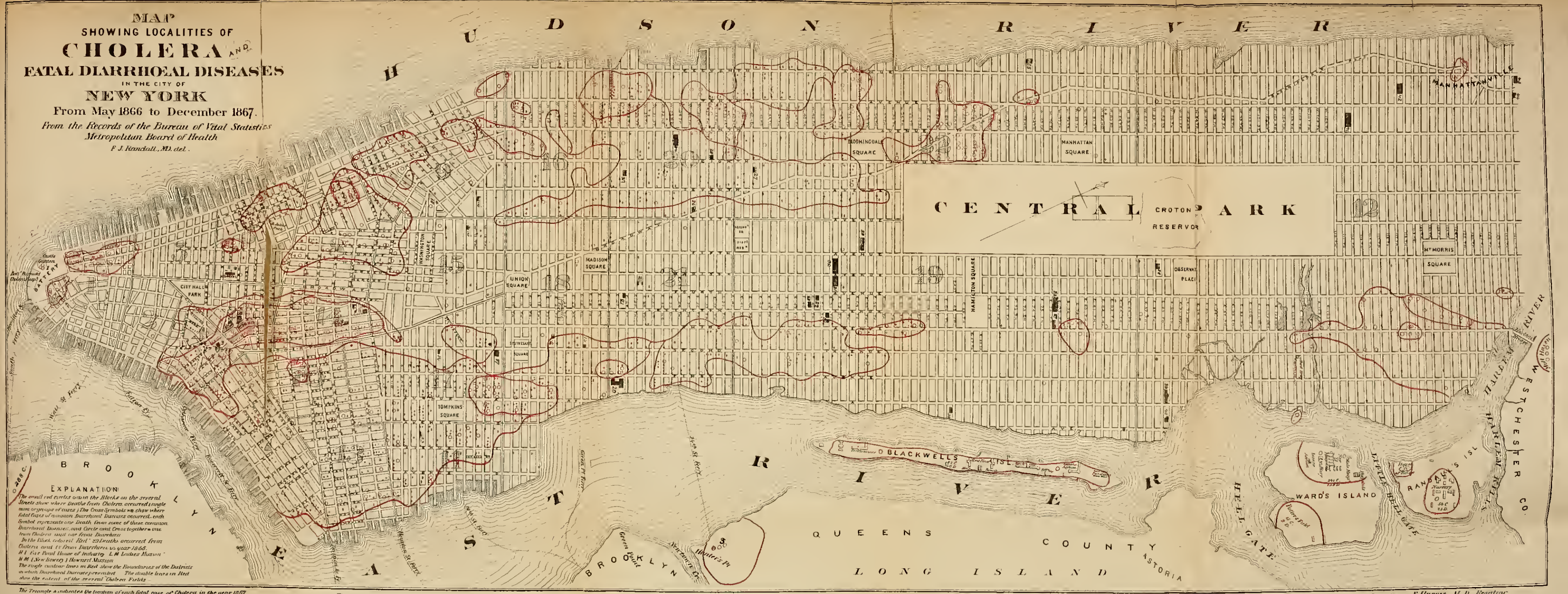

MAP
SHOWING LOCALITIES OF
CHOLERA AND FATAL DIARRHOEAL DISEASES
IN THE CITY OF
NEW YORK

From May 1866 to December 1867.

From the Records of the Bureau of Vital Statistics
Metropolitan Board of Health

F. J. Randall, M.D. del.

EXPLANATION

The small red circles on in the Blocks on the several Streets show where Deaths from Cholera occurred (single cases or groups of cases) The Cross Symbols show where fatal Cases of common Diarrhoeal Diseases occurred, each Symbol represents one Death from some of these common Diarrhoeal Diseases, and Circle and Cross together one from Cholera and one from Diarrhoea.

In the Block coloured Red 29 Deaths occurred from Cholera and 12 from Diarrhoea in year 1866.

H I Five Point House of Industry L M Ladies Mission
H M (New Bowery) Howard Mission

The single contour lines in Red show the Boundaries of the Districts in which Diarrhoeal Diseases prevailed. The double lines in Red show the extent of the several "Cholera Fields".

The Triangle ▲ indicates the location of each fatal case of Cholera in the year 1867.

The sites of Hospitals and Charitable Institutions are indicated by ■ ■■■

To accompany the Second Annual Report of the Bureau of Vital Statistics. E. Harris, M.D., Registrar almost exclusively, a saving from cholera. Indeed, this was absolutely the fact in Brooklyn, for the 380 lives gained from ordinary diarrhœal deaths were scarcely equivalent to the *pro rata* increase of deaths from the rapidly increased population. Briefly, medical experience and the records of death show that the total quantity of fatal diarrhœal diseases, exclusive of Asiatic cholera, in the two cities and throughout the Metropolitan District, was nearly the same in each of the two past years. And there is a still more important circumstance to be mentioned, namely, that medical testimony is borne to the fact that, so far as merely diarrhœal disorders were concerned, there seems to have been a far more *epidemic* tendency to this class of maladies in the latter than in the previous year.

List of the Hospitals and other Public Institutions, as Indicated on the Map.

No. as given on the map.	Names.	Location.
1	Castle Garden (Emigrant Landing and Labor Exchange)	Battery.
2	City Hospital	319 Broadway.
3	Howard Mission (Home for Little Wanderers)	40 New Bowery.
4	Five Points (Ladies') Mission	61 Park street.
5	Five Points House of Industry	155 Worth street.
6	New York Dispensary	White and Centre streets.
7	Eastern Dispensary	Essex Market, Grand street.
8	Catholic Orphan Asylum	Prince, corner Mott street.
9	Lying-in Asylum	85 Marion street.
10	House of Protection	33 E. Houston street.
11	German Dispensary	8 Third street.
12	St. Franciscus Hospital	409 Fifth street.
13	Northern Dispensary	Waverley Place, cor. of Christopher street.
14	Infirmary and Dispensary for Women and Children	162 Second avenue.
15	Protestant Half-Orphan Asylum	65 W. Tenth street.
16	St. Vincent's Hospital	195 W. Eleventh street.
17	Eye and Ear Infirmary	216 Second avenue.
18	Old Ladies' Home	226 E. Twentieth street.
19	Demilt Dispensary	401 Second avenue.
20	Bellevue Hospital	Foot of Twenty-sixth street, East River.
21	New York Ophthalmic Hospital	387 Fourth avenue.
22	Mount Sinai Hospital	138 W. Twenty-eighth street.
23	Home for the Friendless and Female Guardian House	32 E. Thirtieth street.
24	Institution for the Blind	Ninth avenue, between 33d and 34th street.
25	Orthopedic Dispensary and Infirmary	1299 Broadway.
26	North-western Dispensary	511 Eighth avenue.
27	Asylum for Aged and Infirm (M. E.)	255 W. Forty-second street.
28	Protestant Episcopal Orphan Asylum	Forty-ninth st., near Lexington ave.
29	Woman's Hospital	Fourth avenue, cor. Fiftieth street.
30	Infant's Home Dispensary	Lexington avenue and Fifty-first street.

No. as given on the map.	Names.	Location.
31	R. Catholic Orphan Asylum (male)	Fifth avenue and Fifty-first street.
32	R. Catholic Orphan Asylum (female)	Eighty-sixth st., near Second avenue.
33	St. Luke's Hospital	Fifty-fourth street, corner Fifth avenue.
34	Colored Home	First avenue and Sixty-fifth street.
35	N. Y. Orphan Asylum	W. Seventy-first street and Bloomingdale road.
36	German Hospital	Fourth avenue, corner Seventy-seventh street.
37	Hebrew Orphan Asylum	Seventy-seventh street, near Third avenue.
38	Magdalen Asylum	Eighty-eighth street, near Fifth avenue.
39	German Catholic Orphan Asylum	Eighty-ninth street, corner Avenue A.
40	House of the Good Shepherd (Magdalen)	Ninety-first st. and East River.
41	The Leake and Watts Orphan Asylum	109th & 110th sts., bet. 9th & 10th avs.
42	Bloomingdale Lunatic Asylum	117th street and 10th avenue.
43	College of the Christian Brothers	W. 131st street, cor. 11th avenue.
44	Manhattan Dispensary	131st street, between 10th and 11th avenues.

NOTE.—There are many other public institutions and charitable establishments in the city, but we enumerate above the more important and populous ones which were exposed to cholera in the epidemic of 1866. The institutions which are located upon the islands in the East River are indicated by outlines and names on the map.

To prevent the confusion that would result from printing upon the map the symbols to indicate the situation of each house in which deaths occurred from the common *diarrhœal* diseases in the year 1867, those symbols are omitted; but as they would mostly be included within the contour lines that mark the diarrhœal fields, this map is made to illustrate the records of the two years, 1866 and 1867. The wards are numbered, and their boundaries are shown in black.

And now we come to notice the all-important circumstance that has characterized the "*diarrhœal and cholera fields*" in these two consecutive years. The boundaries and areas of these unhealthful sections of the city were coincident and almost identically the same in the last as in the previous season. There was a difference, in the following respects only, so far as we can discover: (1.) The extent of some of these fields of bowel-disease was diminished; and such difference has been noticed only in those districts in which sanitary scavenging and cleansing have been particularly thorough and incessant during the past summer. The Fourth, Sixth, the Sixteenth, and a part of the Seventeenth wards are instanced as illustrating this point. (2.) The fatal force or *lethality* of these diseases was apparently diminished in the districts last mentioned. (3.) Lastly, in certain localities that were, in this year of unusual rain-falls, supersaturated with surface moisture (and, possibly, the wash of sewers), as in portions of the Eleventh, Seventeenth, and Twenty-second wards, there was a greater amount of fatal diarrhœal disease, exclusive of cholera, in 1866 than 1867. Similar experience in various undrained sections of Brooklyn taught the same practical lesson as these persistent haunts of bowel-disease in New York. They concentrated their teachings upon the one great question of sanitary drainage and sanitary cleansing.

Is the Epidemic of Cholera liable to return to the Metropolis?—Cholera has returned to several places in Europe, and to some in the United States. It may return to us, and, if it does gain an epidemic hold in the "diarrhœal fields" in New York and Brooklyn, there will be a greater liability to its malignant prevalence the ensuing year or two than in the summer of 1866. This conclusion is based upon the principle which Drs. Pettenkofer, Griesinger, and Simon have demonstrated in their careful studies of the conditions of soil and moisture that most favor the propagation of cholera. That principle, briefly, is stated as follows:

The cholera germs or infection, by whatsoever means they chance to be introduced into any town or city, will be *epidemically propagated* only where and when certain conditions of putrescence in the earth, the atmosphere, or the potable water are present; that where any two or more of these unhealthful circumstances are present, the certainty and the severity of the epidemic will be greatly increased, unless the disinfecting power of acid antiseptics is brought to bear at every point of infectious exposure; and, finally, the co-existence and co-operation of surface moisture of the ground, technically, in the words of Prof. Pettenkofer, the ground-water, is the most constant and essential of all the physical agencies that promote the propagation of cholera, after the germs of infection have been introduced.

The Chief Practical Lesson in Cholera-Prevention.—The reeking filthiness of New York and Brooklyn at the time cholera made its advent, in the spring of 1866, rendered it imperatively necessary for the Board of Health to resort very largely to the chemical antiseptic and disinfecting method of arresting and destroying the cholera poison. The doctrines upon which that sanitary practice is founded have been abundantly confirmed by a world-wide experience the past year and a half. The review we gave last year upon the evidences and philosophy of this preventive practice, will be found fully corroborated by all recent experience and testimony.* In the application of exact and absolute science to the elucidation of the most difficult questions relating to the essential nature and entity of the cholera infection itself, great progress seems to have been made. But these questions in mere science,

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* In the progress of exact scientific knowledge concerning the nature of the infectious cause,—or the communicable and *propagating element* in the assemblage of causes of cholera, great progress has been made during the present epidemic. And in the precision

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and possible results of some of these steps of progress there is something worthy of the highest promises of exact science. But these revelations of the highest powers of the microscope and the nicest tests of chemistry have not in any manner changed or diminished the plain teaching of that philosophical and practical mastery which had previously been attained by leading hygienists. Hence, this year, we need here only refer to the practical review concerning Preventive Measures that was contained in the report submitted by the writer, in the Board's first report. But in regard to these curious and very promising advances in our knowledge of the precise and *organic* agencies by which cholera seems to be propagated, the Metropolitan Board of Health is not indifferent. These marvelously interesting advances in this kind of exact scientific discovery may be concisely epitomized as follows:

The Cholera Fungus—cylindro-tænium.—Ever since the year 1838, the best microscopical students, particularly those who were familiar with the minute forms of vegetable and animal parasites, have sought for the existence of some minute kind of cryptogamic cell-growth or fungus parasite that might turn out to be found exclusively in the rice-water excrement of the cholera-sick. With occasional apparent success, but mostly in deep and repeated disappointment, the chief students of these things reached uncertainties only. The records of these efforts fill a thousand pages in various languages. There are reasons for believing that the recondite mysteries of zymosis, at least in such a pestilence as cholera, are in some way dependent upon cell-germs and cell-growth more or less like certain ferments, like the torula in yeast. Still more, it has long seemed probable that some minutest kind of organic cell-germs would at last turn out to be the secret carriers of the cholera pestilence. To discover and describe such a *carrier* and germ of the pestilence would, in some sense, give certainty to preventive measures against it. During the year 1866, several of the ablest microscopists in Europe made great progress in this branch of inquiry, and, separately or independently as regards each other, they have reached the same results, which, in untechnical phraseology, may be expressed as follows:

In the rice-water excrement of cholera-sick persons, and within the intestinal canal of such persons,—also in the water and soil that have been in any manner made to receive or imbibe the rice-water excrement,—is discovered a peculiar cell-growth or fungus cyst that in most respects resembles in its developed state, the fungus known as the Penicillium and other forms of the Oïdium that are so well known in connection with certain blighting diseases of cereals, as well as with the diphtheritic and other diseases of the human body. But this is a new and peculiar species of fungus-cell that is as marvelous for its rapidity of development as for its strange forms of growth and its terribly fatal destruction of the epithelial tissue of the intestine (it is termed *cylindro-tænium* or *zooglœa*, by Profs. Thome and Klobe; but we have chosen to mention it as Prof. Haller and Dr. Simon do, as being an exotic member of the family to which the *urocystic* and *oidium* blights of the cereal grains and fruits belong. Haller has proved that from a certain stage of development in cholera-fungus he has found it would grow luxuriantly in the rice plant, which is a native of India).

As described by Prof. Ernst Hallier, of Jena, this fungus cell-growth is a Penicillium bearing one, or rather it is a urocystic variety, which is known to be a native of India only, and having the following peculiarities:

1. As shown in all his experiments, its life (power of further propagation or growth in the urocystic form) is instantly destroyed by an acid condition of the fluid or soil in which their growth was being observed.

2. The presence of an abundance of nitrogenous matter, and the absence of acids, in the soil, the substance or the fluid in which the propagation and development of the cholera-fungus was being observed, experimentally, was proved to be an essential condition for such propagation and growth.

3. When the fungus-cells, in the course of their development upon a piece of intestinal

and the apparently successful answer to some of the most abstruse ones, do not yet in the least diminish the practical force and cor-

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membrane (in a bottle), reached a certain stage, they rapidly increased and the epithelium as rapidly wasted away.

This subject is so pregnant with possible, we might say—*probable*—importance, that it is at least a duty to keep ourselves well informed in the progressive knowledge concerning it. But, aside from the apparently strong confirmation it gives to all our fixed rules for cholera prevention, this latest discovery in the history of parasitic organisms may not aid the sanitary officer in any practical manner, for, as Dr. Simon has recently said in regard to the practical application of such knowledge in a health officer's daily duties:

"Nowhere out of Laputa, could there be serious thought of differentiating the excremental performances into groups of diarrhœal and healthy, or of using the higher powers of the microscope to identify the *cylindro-tænium* for extermination. For it is *excrement*, indiscriminately, that must be kept from fouling us with its decay."

Disinfection.—Vast experience in all kinds of disinfection, as well as the very nice experiments that have been made upon the cylindro-tænium with chemicals, thus far seems simply to corroborate the chemical doctrines ef cholera disinfection which Professor Pettenkofer first taught, as regards the application of sulphate of iron and certain other acid-reacting chemicals. Sulphate of iron, combined with solutions of carbolic acid, is demonstrated to be the most effectual of all disinfectants for cholera defilement; and, for clothing, the solutions of permaganate of potassa, or of sulphate of zinc, are practically the most applicable.

Discovery and Application of New Chemical and Physiological Tests in the Blood.—We would briefly allude to a practically useful discovery that has been made, during the late epidemic, by M. Papillon, in the laboratory of Prof. Chas. Robin, a leading authority in the highest branches of physiological knowledge:

1. That upon taking blood from a person sick or dead with cholera, and after carefully separating and drying the albuminous part of that blood, if sulphuric acid be touched to the surface of the dried albumen, it will not produce the black stain that is produced by that acid when touched to the dried albumen of blood that has been taken from persons not suffering from cholera.

2. That when such albumen (from cholera blood) is touched by a mixture of *nitric* and *sulphuric acids*, there will be no elimination of the *hyponitious fumes*.

3. That when hydrochloric acid is touched to cholera-blood albumen, it produces no such deep violet stain or tint, as that which it produces in all other blood-albumen.

4. That when thrown into water (cold or hot) the mass of dry albumen remains unaffected, and thus proves the loss of the ordinary hydroscopic property which other blood-albumen possesses.

5. When treated in the aqueous solutions of potassa and soda, of proper strength and temperature for dissolving all other kinds of blood-albumen, this albumen from cholera blood refuses to enter into solution.

In the course of a vexatious inquiry into the nature of a disease that destroyed a great number of lives upon the emigrant ship "Minnesota," these discoveries of Prof. Robin chanced to serve a good practical purpose, though the chemical tests gave negative results mainly, answering neither to these chemical tests of cholera-albumen, nor to that of healthy blood. The patients sickened and died without cholera discharges and with no suppression of urine. For want of a better name, we called this disease cholera *sicca*; but it was a kind of purpuric disease, and occurred in a company of sturdy Irish emigrants.

Perhaps the most interesting and important chemical researches upon cholera, the past two years, are those by Dr. Thudichum, an official assistant of Dr. Simon, the Medical Officer of the English Government. But no one point reached in the chemical researches upon cholera seems as important as the *physiological* fact which Prof. Robin has proved concerning the great change which occurs in cholera-blood. The precise nature of the intimate fatal changes which cholera produces in the blood may soon be discovered; but all such knowledge progresses by most laborious steps. All the great practically preventive measures have thus far been attained without these nice inquiries by chemists and microscopists.

rectness of the practical conclusions that had previously been reached concerning the sanitary measures that prevent cholera epidemics in towns. And upon this subject the forcible and massive testimony of Dr. John Simon, the Chief Medical Officer of the English Privy Council, recently given to Parliament, in a most learned report upon the latest advances of science in the study of cholera, fully conveys the views of the most experienced and exact observers of the epidemic and its accessory causes. This testimony correctly sets forth the leading lesson which cholera, as the Great Sanitary Inspector, has everywhere taught, while stalking abroad over continents and through cities in every latitude. After showing how essentialy useful the practice of thorough disinfection is now proved to be, Dr. Simon says:

"Practically, the business of resisting cholera on any large scale resolves itself into aims of prevention; and in contrast with the powerlessness of curative medicine, the preventive power which we possess is among the happiest possessions of science.

* * * "That which for public use in this country I believe to be without a shadow of doubt, now as for long past years, the all-important principle of cholera prevention is the principle that for us *cholera derives all epidemic destructiveness from filth, and especially from excremental uncleanliness.*"

Rehearsing next the evidences concerning "the cholera fungus—the alleged discovery that the specific zymosis of cholera, the bowel fermentation in respect of which it is contagious, has essentially associated with it, and perhaps as its immediate cause, as definite multiplying *organic* form,"—this greatest of sanitary philosophers and eminently effective health officer of England goes on to say, in conclusion:

"In the long chain of cause and effect through which the rise of a certain ferment in India becomes the predestining force for subsequent outbreaks of pestilence in Europe, we see at present only one link where we may strike with the certainty of preventive effect. Whatever may be the explanation of the fact, at least empirically, we know that here in Europe the pestilence rages only where there are definite sanitary evils. This knowledge remains unchanged; and unchanged remains also our practical means of applying it. Between different epidemiologists there may be differences, even strong differences, of opinion, as to the intimate nature of some of the steps by which the Asiatic influence becomes able to operate on the individual dweller in some English town; but practically all would unite in saying that the chain of evil is abruptly broken wherever thorough cleanliness prevails. The details of the contrary condition are beyond measure disgusting to write about; but more disgusting by far it would be that they should continue through not being identified. It cannot be too distinctly understood that the person who contracts cholera in this country is *ipso facto* demonstrated, with most absolute certainty, to have been exposed to excremental pollution; that which gave him cholera was (mediately or immediately) cholera contagium discharged from another's bowels; that, in short, the diffusion of cholera among us depends entirely upon the numberless filthy facilities which are let exist, and especially in our larger towns, for the fouling of earth, and air, and water, and thus secondarily for the infection of man, with whatever contagium may be contained in the miscellaneous outflowings of the population.

Excrement-sodden earth, excrement-reeking air, excrement-tainted water, these are for us the causes of cholera."

Believing that there never has been a period since 1848 when there could be greater necessity for adopting effectual measures against epidemic cholera, we respectfully submit to the Board of Health these records and notes concerning the deadly foe that has for two years been kept in abeyance, but has not yet ceased to threaten the American continent and its metropolis.

PHTHISIS PULMONALIS.

This blighting affliction of humanity visits New York and Brooklyn less fatally than the New England towns, but the 3,286 deaths, or 14.02 per cent. of the total number of deaths by all causes in New York, and 1,161, or 13.51 per cent. of all in Brooklyn, left many sad blanks in society. If consumption should ere long be demonstrated to be a really preventable disease, its causes would at once be sought out and controlled by law. Its domestic, hereditary, and dietic causes are well studied, but only the first in this list can be officially controlled by any sanitary government among a free people. Tuberculous men and women will wed, and families will live on what diet they please; but something may be done to enforce the structural means of ventilation and air-supply for human lungs. And, in the progress of inquiry in this Bureau, and by good medical observers elsewhere, it turns out that there are found certain local conditions that are extra-domiciliary, and not personal, which are, or seem to be prone to induce consumption. Attention was first called to this subject in a definite manner by Dr. Henry I. Bowditch, of Boston, and knowing the desirableness of more information on the subject, inquiries have been commenced upon the questions most relevant to the object in view, viz: the saving of life by discovering the real causes of fatal disease in the Metropolitan District. And we mention this subject here, because it is desirable that both sanitary officers and other physicians should observe and report all facts that will tend to show by what circumstances tubercular phthisis is engendered.

We know that injurious occupations, or, rather, that hurtfully-conducted trades, unventilated workshops, churches, schoolrooms and places of assemblings; and, still more, that unventilated dormitories, and close, unlighted, and damp living-rooms, are the chief sources of phthisis in our cities. But it comes to pass that the homes of affluence and the fairest examples of genius and useful learning are so often afflicted by this insidious destroyer that the discovery of a *local* cause of the disease, or of an infectious principle in it, has come to be a matter in which every class of society is concerned to find out preventive measures.

The facts we desire to submit are these:

First. That in an elaborate and statistically fortified report which Dr. John Simon has recently prepared by the aid of skilled experts, who made their investigations under his direction for the English Government, records of mortality and the present condition of the living, in twenty-five large towns where sanitary drainage and kindred improvements have been most needfully as well as effectively executed in the past twenty years, a great decrease in the quantity and fatality of consumption turns out to be the very chief and most constant of all the good hygienic results to the resident population. The evidence upon this point is voluminous and convincing.[*]

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[*] Concerning this investigation in the twenty-five towns and cities, Dr. Simon, who planned and superintended it, says:

"Certain of our English proceedings, especially our modern works of town-drainage, have been great popular experiments in the management of the public health; experiments, it is true, which medical science could not deem of doubtful promise; but not the less to the popular mind, experiments to be judged by their actual fruits. Their lordships (the Privy Council) authorized me to institute the inquiry. * * It has related to twenty-five towns, with an aggregate population of more than 600,000 persons. * * * * In some of the twenty-five towns structural improvements have but very recently been made, in others such improvements have been made for seven or eight years and upward."

After reciting the statistical proofs that cholera, typhoid fever, and fatal diarrhœa had been successfully resisted, first, in proportion to the "dis-pollution" of the towns by works of drainage and cleansing, this officer goes on to remark upon his records of the investiga-

Now this must be regarded by the public as a most gratifying and unexpected result. But great observers among our American physicians have reached similar conclusions, though from more limited fields and records for study of the facts. And it is because this subject is one of very vital importance, and one that by the aid of physicians of the Metropolitan District, and by the statistical returns they furnish to this Bureau, can be successfully studied, we deem it to be a duty of first rate importance to begin inquiry in this field. Practically considered, there is probably no kind of skilled sanitary service performed under direction of the Board of Health that ensures more permanent and universal benefits to health, and which so much tends to guard against the *preventable* causes of phthisis as well as of cholera and endemic diseases, as the service of the Sanitary Engineer, in planning the much-needed works for local drainage, surface drying, and domestic ventilation.

The following points, which seem now to have been satisfactorily reached by Dr. Bowditch's and Dr. Simon's investigations, were well stated by the former excellent observer in the year 1862. These conclusions were based upon a special practice in lung diseases, and especially upon a series of special researches of the physicians throughout Massachusetts.

"1. Consumption is not equally distributed over New England.

"2. Its greater or less prevalence depends very much upon the characteristics of the soil on or near which the patients affected with it have resided.

"3. *Moisture of the soil* is the only known characteristic that, so far as our investigations have gone, is connected with consumptive-breeding districts."*

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tion, that "the drying of soil which has, in most cases, accompanied the laying of sewers in the improved towns, has led to the diminution, more or less considerable, of phthisis. * * * * The reductions on the death-rates by phthisis in the first fifteen towns, are as follows: Salisbury, forty-nine per cent. on its previous rate; Ely, forty-seven per cent.; Rugby, forty-three per cent.; Banbury, forty-one per cent.; Worthing, thirty-six per cent.; Macclesfield, thirty-one per cent.; Leicester, thirty-two per cent.; Newport, thirty-two; Cheltenham, twenty-six; Bristol, twenty-two, Dover, twenty; Warwick, nineteen; Croyden, seventeen; Cardiff, seventeen; Merthyr, eleven. The towns here mentioned were once as distinguished for unhealthfulness as they are now for the benign results of sanitary works of drainage and cleansing. The general death-rate has fallen nearly one half in them all. But the fact that mortality by phthisis has decreased more uniformly and considerably than any other, should create new friends to the sanitary governments that are pressing forward the local improvements by which such results can alone be attained."—*Ninth Report of the Medical Officer of the Privy Council.* Blue-book, 1867.

* In quoting these three deductions by Dr. Bowditch (see his illustrated Report on

Seeing how great the ravages of consumption are in New York and Brooklyn, and knowing that there are extensive neighborhoods in the rural portions of the Metropolitan District that suffer by this destructive disease even more than these cities, we cannot avoid this notice of some of the most preventable causes that engender and perpetuate it as a blighting affliction to particular localities and to particular populations. The evidence upon this subject is cumulative and convincing, but facts relating to it need to be continually added by all medical observers who make returns to the sanitary authorities. The ultimate results of such inquiry will, in all probability, be among the richest benefits which sanitary science has conferred upon society. While we see upon every hand an impoverished and badly housed class of our fellow beings constantly yielding to the combined force of all the causes that engender fatal tuberculosis of the lungs, it is quite essential that wherever there exists any one great general cause which, in an unsuspected but fatal manner, is silently undermining the health and life of families, there particularly, and with all the effectiveness that science and sanitary regulations can give, must comprehensive and permanent sanitary measures be applied. Such, thank God, is the work of sanitary drainage of grounds and sanitary sunlighting and ventilation of habitations.

The subjoined table shows the ages, nativities, occupations, etc., of the decedents by phthisis in the year ending September 30, 1867.

In this summary of the records of phthisis we present only the facts which are fully stated in the certificates we have received from the attending physicians. There remains to be presented in a future report another and most important class of local and personal records concerning the decedents by this great destroyer.

"*Consumption in New England: Locality One* of its *Chief Causes*"), I beg leave to state that these views of great general causes of phthisis, are already inducing the best physicians in New England to advocate works of drainage and other local sanitary improvements. Dr. Simon's massive argument upon the subject, made a few months ago to Parliament, was received with deep interest by the sanitary authorities in the British cities, and it will add fresh encouragement to the works of sanitary drainage now in progress in the British islands. And, following closely upon these grand generalizations, there has been added new and conclusive evidence that tubercular phthisis possesses a contagious or infectious element; and this proof enables us to consider and treat the chief causes of this disease as belonging to the zymotic poisons. Dr. William Budd, of Bristol, England, has kindly and very fully communicated to me, in writing, his views upon this subject. He and Prof. Villemin (of Val de Grâce) have clearly proved the existence of the infectious principle in phthisis, while Drs. Bowditch, Simon and others, have opened up a great and life saving truth concerning the most universal of the local sources of the disease. These two classes of facts are entirely harmonious, so far as we rightly comprehend them.

Having mapped out the two cities and the entire Metropolitan District into (1.) *Drained and Undrained* sub-districts, and (2.) the *Over-crowded and badly housed* and the *uncrowded and decently housed*—the sanitary inquiries regarding this fatal disease will extend to its chief *removable* causes, and the questions of parentage and nativity, and, particularly, the subject of unhealthful occupations are being regarded in the inquiries. Already our records show that the death-rate by consumption is much greater in some districts than in others, and also in some classes of dwellings than in others. For example, we find that in the southern half of the Twenty-first Ward (the wet flank of Murray Hill), the phthisis mortality bears a ratio to that in the northern and elevated half of the same ward, which in 1867 was expressed as 75 to 55 ; Bellevue Hospital being excluded from the records of the former section. Again, we find that in particular blocks of dwellings the consumption death-ratio is thrice greater than in other and better blocks, the census of population being the basis of the calculation.

Abstract of the record of deaths by phthisis pulmonalis, in the city of New York, in the fifteen months, ending December 31, 1867.

Showing Ages, Sexes, Nativity and Classes of Occupations; also the Months and the Wards in which these Deaths occurred.

Statistics relating to the Total of this Mortality by Ages and Sexes.

Ages.	Male.	Female.	Total.
Under 1 year....	63	37	100
1- 2 years.....	40	36	76
2- 3 years.....	13	21	34
3- 4 years.....	6	12	18
4- 5 years.....	10	8	18
5-10 years.....	20	20	40
10-15 years.....	42	40	82
15-20 years	77	109	186
20-25 years.....	214	232	446
25-30 years.....	276	287	563
30-35 years.....	231	278	509
35-40 years.....	253	255	508
40-45 years.....	211	191	402
45-50 years.....	191	136	327
50-55 years.....	144	107	251
55-60 years.....	99	81	180
60-65 years.....	85	51	136
65-70 years.....	63	52	115
70-75 years.....	24	30	54
75-80 years.....	20	23	43
80-85 years	9	13	22
85-90 years.....	1	10	11
90-95 years.....	1	1	2
Total........	2,093	2,030	4,123

Deaths in the Different Months, and the Nativities.

Total in each Month (from Oct., 1866, to Dec., 1867).	Male.	Female.	Total.
1866.			
October..................	135	130	265
November..................	129	136	265
December..................	157	151	308
1867.			
January..................	181	147	328
February..................	136	109	245
March..................	162	149	311
April..................	143	133	276
May..................	141	130	271
June..................	112	108	220
July..................	109	125	234
August..................	137	155	292
September..................	125	129	254
October..................	135	135	270
November..................	136	131	267
December..................	155	162	317
Total..................	2,093	2,030	4,123

Nativities.	Male.	Female.	Total.
Native..................	698	732	1,430
Ireland..................	823	942	1,765
Germany..................	365	235	600
Other foreign countries......	207	121	328
Total..................	2,093	2,030	4,123

Statistics Relating to Acclimatization, Occupations, Mortality in Hospitals, etc.

Residence in country.	Male.	Female.	Total.
Less than five years....	117	103	220
Five to ten years......	114	119	233
Ten years and upward.	749	664	1,413
Total..............	980	886	1,866

Occupations.*	Total.
Educated men (professional)............	38
Merchants..................	70
Clerks..................	108
Printers..................	37
Bakers..................	15
Laborers..................	258
Male servants..................	35
Female servants..................	193
Other occupations, &c..................	3,369
Total..................	4,123
Bellevue Hospital..................	146
Hospitals..................	775

Deaths in Wards.

Wards.	Total.
1st Ward......	54
2d Ward......	7
3d Ward......	14
4th Ward......	151
5th Ward......	103
6th Ward......	150
7th Ward......	189
8th Ward......	190
9th Ward......	203
10th Ward......	149
11th Ward......	252
12th Ward......	171
13th Ward......	127
14th Ward......	136
15th Ward......	91
16th Ward......	183
17th Ward......	346
18th Ward......	228
19th Ward......	612
20th Ward......	275
21st Ward......	317
22d Ward......	175
Total........	4,123

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* Until the last quarter of 1867, the occupations of the decedents continued to be very unsatisfactorily certified; hence this portion of the records is incomplete in its details.

Other Preventable Diseases.

In the list of 2,241 deaths by diseases of the brain and nervous system; in that of 721 deaths by diseases of the heart and circulatory organs; in the 2,777 deaths by inflammatory disease of the respiratory organs, and in the residue of the category presented in our consolidated abstract, we need to mention such causes and such classes of the deaths as are preventable. But with a single remark we pass them until another year.

Vainly have we endeavored to reduce the number of certificates of death by *convulsions*. By persistent effort, however, we have succeeded in obtaining a greater proportion of strictly correct returns of the *chief* cause of the death of those that suffer convulsions in their last hours of life. For example, the fact will be seen that the total number of deaths by meningitis and by inflammation of the brain has increased as the total number accredited to convulsions has decreased. But the word "convulsions" stands upon the public registers in the column of "complicating causes of death," in all cases that were so certified (or so corrected), by the physician.

Inanition and marasmus, also, are this year accredited with many deaths that were in the first instance returned by physicians as death by convulsions, but which they subsequently certified more correctly. Neither the name of the last *symptom*, nor the mere *mode* of death, ought to be accepted as the name of the actual cause.

A venerable physician, in making a return of "congestion of the lungs," as the chief cause of death in a tenant-house child a few weeks ago, added that the "remote cause of the death was plainly "suffocation in the foul air of an unventilated tenement." The fact is becoming, every month, more and more apparent, that fully one half of the acute diseases of the lungs, and much more than half of the deaths by congestion of the lungs and bronchitis in New York, are chargeable to the foul and stagnant atmosphere of the unventilated, improperly-heated rooms in which the great majority of the people spend their days and nights. Upon no subject is popular information and common sense more needed than in regard to the purity and amount of the air which human beings should have every minute in the twenty-four hours.

Puerperal diseases and the fatal accidents of maternity, have been at a remarkable minimum throughout the year in the well-to-do classes, but they have been painfully destructive in certain instances of malpractice, where ignorance and rashness have chanced to preside. Certain of the "*accidents*" of childbirth that have occurred in consequence of the foolhardiness and ignorance of unqualified midwives, &c., have afforded new proofs of the claim of the wives of the poor to adequate protection from the gross ignorance and impostures of many persons that now practise obstetrics.

Criminal abortion has become a death-dealing trade, and, unfortunately for the innocence and health of the less tempted rural population throughout the State, not a few women die in the city, by the most agonizing modes of death, before they can be conveyed to their distant homes. Such crime, such suffering and death by criminal causes, and such shame at last, would seem to be sufficient to deter others from incurring such hazards to life and womanly honor. The State continues to let the child-murderers, who make a trade of fœticide, go on unrestrained in their ghoul-like business.

Still-Births.—The number of dead-born infants that were reported to the Board of Health (always by application for burial permit), was 2,228 in New York, and 799 in Brooklyn the past year.

This number in New York shows *a higher ratio of still-births to the total number of deaths* by all causes than is reported in the chief European nations. The ratio of the registered still-births to the total deaths by all other causes in New York, last year, was 9½ per cent., or 1 to 10½ other deaths. The highest European ratios, of which we have records in the official reports received by us, are as follows: Prussia has a still-birth ratio of 5.80 per cent., or 1 to 18 deaths by other causes; Belgium has 5.69 per cent., or 1 to 18 total other deaths; and France has 3.51 per cent., or 1 in 28 of total others.

For the present we forbear to present any deductions from the records of this class of deaths. In no country has the medical and statistical history of still-births been so studied as to show what may be the normal or inevitable ratio which this class of calamities bears to the total number of deaths by all other causes; much less is it known what is the inevitable ratio of still-births to living-births. But these facts we notice, and can demonstrate by accurate records, viz: *First.* That by far too many of the dead-born had no accoucheur present to give that skilful aid which the science of obstetrics offers at the hands of educated physicians. Upon the subject of unskilful midwifery, by all sorts of ignorant women, we beg leave to add emphasis to the statement that we made in last year's report. *Second.* The great number of still-births that are certified to have occurred between the fifth and eighth months of fœtal existence, add force to other evidences that a certain large percentage of these blighted lives are cut off by *fœticide*—a degrading crime, that is rapidly becoming a publicly blazoned shame to society.

The Waste of Infant Life.—The subjoined statistics present their own appeal to the Board of Health, and to society at large for the speedy reformation of the chief preventable causes of excessive waste of young life in these two cities.

Table of Mortality in the First Year of Life for the Year ending September 30, 1867.

NEW YORK.

1867.	Total under one week.	Total between first and fourth weeks.	Total between fourth and eighth weeks.	Total in the third month.	Total between third and six months.	Total in the last six months of the first year of life.	Total deaths in the first year of life.
Total No. of Infant-deaths ..	891	884	945	3,605	1,613	2,281	7,499

Deaths in the first Five Years of Childhood in the Twelve Months ending September 28, 1867.

NEW YORK.	Diarrhœal diseases.	Tabes mesenterica.	Nervous diseases.	Convulsions.	Measles.	Scarlatina.	Diphtheria.	Croup.	Lungs.	Developmental.	Others.	Total.	Foreign parentage.
Under 1 year of age,	1,755	684	416	999	96	68	67	70	944	988	1,412	7499	3,346
From 1 to 2 years of age..............	721	203	243	227	195	133	79	95	390	51	427	2764	1,657
From 2 to 3 years of age..............	84	53	89	66	76	188	45	75	149	7	220	1052	531
From 3 to 4 years of age..............	24	13	60	36	45	152	33	34	67	2	134	600	294
From 4 to 5 years of age..............	25	9	45	17	12	86	21	26	50	3	95	389	202
Total under 5 years of age..............	2,609	962	853	1,345	424	627	245	300	1,600	1,051	2,288	12304	6,030

Deaths in the first Five Years of Childhood in the Twelve Months ending September 28, 1867.

BROOKLYN.	Diarrhœal diseases.	Tabes mesenterica.	Nervous diseases.	Convulsions.	Measles.	Scarlatina.	Diphtheria.	Croup.	Lungs.	Developmental.	Others.	Total.	Foreign parentage.
Under 1 year of age,	779	315	138	355	41	33	19	28	301	474	526	3,009	582
From 1 to 2 years of age..............	346	129	75	74	67	86	34	42	123	.....	210	1,186	317
From 2 to 3 years of age..............	43	23	45	26	30	78	13	45	54	... .	88	445	83
From 3 to 4 years of age..............	10	10	20	12	17	71	10	20	23	.....	68	261	37
From 4 to 5 years of age..............	9	2	13	6	3	39	5	15	16	.....	32	140	26
Total under 5 years of age...............	1,187	479	291	473	158	307	81	150	517	474	924	5,041	1,045

Deaths by Accidents, Negligence, Violence.—In the subjoined abstract will be seen how the deaths by violence, accidents and negligence, are classified in the statistics of this Bureau. These were Coroners' cases; and though the columns do not present the entire list of deaths that we know occurred from negligence, they comprise all that were reasonably subject to the magisterial inquisition of the Coroner. A full report upon this class of deaths is herewith submitted for the private use of the Board of Health. And we will only add, in this place, that up to the present time the certified records of this important class of deaths, though we include all the sworn testimony of the inquest witnesses, and the final rendering of verdict by the jurors, continues to be the most indefinite and unsatisfactory of all the certificates of death which are filed in this Bureau. The causes for this are ample, and the Board of Health can best judge what defects in these official returns by Coroners can be prevented, as well as what cannot be remedied under the existing sanitary code.

Classification of Causes of Death, Certified by Coroners, in the eighteen months ending Sept. 30, 1867.—CITY AND COUNTY OF NEW YORK.

WILFUL VIOLENCE.															HOMICIDE AND EXECUTED.			ACCIDENTS AND NEGLIGENCE.																	DISEASES.										
SUICIDE BY																							DROWNING					POISONING (NOT SUICIDAL) BY																	
Laudanum.	Paris Green.	Cyanide of Potassium.	Arsenic.	Oil of Vitriol.	Charcoal Carbonic Gas.	Costar's Exterminator.	Strychnia.	Oxalic acid.	Morphine.	Poison, not stated.	Hanging	By instruments.	Gun-shot.	Means used not stated.	Gun-shot.	Various other methods.	Executed.	By Casualties in the streets (exclusive of those by Cars and other vehicles	In and about buildings.	Casualties by and on Wharves and Shipping.	By Railroad Cars.	By other Vehicles.	Suicidal.	Causes not ascertained.	Scalds.	Burns by Explosive Fluid.	Burns by other causes.	Opiates.	Other Poisons.	Strangulation and Suffocation.	Exposure and want.	Injuries not specified.	Fracture of Skull and other parts	Alcoholism and Intemperance.	Convulsions.	Apoplexy.	Congestion of the Lungs.	Asphyxia	Disease of the Heart and Great Blood v'ls.	Other Diseases.	Unclassified injuries.	Effects of Heat and Coup de Soleil.	Still Birth.	Infants under a Week old (that were born alive).
12	5	2	4	1	1	1	1	1	2	4	22	31	16	8	18	23	5	56	172	32	93	47	8	312	39	14	72	6	11	46	22	32	50	46	203	53	33	40	193	915	74	126	413	226

Total Suicides	111	Total Deaths by Opium and Opiates	22	Total Diseases	1,683
Total Homicides	41	Total Deaths by Irritant and Corrosive Poisons	14	Total by Violence (physical or chemical)	1,169
Total Executions	5	Total Deaths by Drowning	320		
Total Accidents and Negligence	1,012			Total all Causes	2,852

* In the Records of the Bureau of Vital Statistics, some cases that have not been seen by the Coroners are ultimately charged to the Accidents and Negligence. The total number of deaths by Accidents and Negligence in this city, during the year 1866, was 849, or 194 more than the number for which the Coroners make returns.

Classification of Causes of Deaths, certified by Coroners, year ending Sept. 30, 1867.—BROOKLYN.

WILFUL VIOLENCE.							HOMICIDE AND EXECUTED.		ACCIDENTS AND NEGLIGENCE.														DISEASES.								
SUICIDE BY													DROWNED.																		
Laudanum.	Paris Green.	Arsenic.	Nux Vomica.	Hanging.	Instruments.	Prussic Acid.	Homicide.	Executed.	Casualties in the Streets.	In and about Buildings.	Casualties by and on Wharves and Shipping.	By Railroad Cars.	Suicidal.	Causes not ascertained.	Scalds.	Burns by Explosive Fluids.	Burns by other Causes.	Poisoning (not Suicidal) by Opiates.	Strangulation and Suffocation.	Exposure and Want.	Injuries not Specified	Fracture of Skull and other parts.	Alcoholism and Intemperance.	Convulsions.	Apoplexy.	Congestion of Lungs	Asphyxia.	Diseases of the Heart and Great Blood-vessels.	Other Diseases.	Unclassified injuries.	Infants under a week old (that were born alive).
4	6	2	1	3	11	1	6	2	33	32	1	14	1	60	11	7	16	1	4	9	8	16	6	84	41	76	7	47	117	9	99

Total Suicides	28	Total Executed	2	Total Diseases	486
Total Homicides	6	Total Accidents and Negligence	213	Total by Violence (physical or chemical)	249
				Total all Causes	735

That the range and exactness of official inquiry into the causes of all violent and accidental deaths should be so thorough and systematic as to give at least all the information which physicians and health authorities could obtain for the public benefit were they clothed with the Coroner's power, need not be argued, for no duty of the Coroner can be plainer, than that by virtue of authority which the laws of the State vest in his office, he should obtain such information.

THE DEATHS IN EXTREME OLD AGE.

Deaths in the City of New York of Persons of 100 *Years and upward, during the Years* 1864, 1865, 1866 *and* 1867.

1864.

NAME.	AGE.			NATIVITY.	COLOR.	DATE OF DEATH.	REMARKS.			
	Years.	Mos.	Days.				Years in U. S.	Married.	Widowed.	Cause of Death.
Hulda Wood	100	3		New Jersey	White	January 9	Life			Old Age.
Bridget O'Brien	100			Ireland	White	February 8				Pneumonia.
Ira Cromwell	104	6		Baltimore, Md.	Colored	March 16	Life			Old Age.
Mary Buckley	105			New York	Colored	March 21	Life			Erysipelas.
M. Thomas	103			Maryland	Colored	May 27	Life			Old Age.
Elizabeth Price	100			North Carolina	Colored	May 31	Life			Old Age.
Leah Cropsie	100			Virginia	Colored	June 17	Life			Dropsy.
Isaac Daniels	109			Bedford, N. Y.	White	June 28	Life			Old Age.
Ann Jackson	100			Staten Island	Colored	July 10	Life			Old Age.
Rachel Stafford	102	6	21	New Jersey	White	July 13	Life			Old Age.
Isabella Cook	100			Virginia	Colored	September 7	Life			Old Age.
Rose Gilligan	103			Ireland	White	December 14				Old Age.

1865.

Mrs. D. McKinney	100			New Jersey	Colored	January 7	Life			Old Age.
Johanna Waters	104			Ireland	White	February 4				Cancer.
Frances Davis	100			New York	Colored	March 13	Life			Asthenia.
Minerva Ellis	105			Jamaica, W. I.	Colored	June 4				Old Age.
Absalom Thornton	105	3	29	Ireland	White	August 9				Strangulated Hernia.
Thomas Galden	104			Ireland	White	August 18				Old Age.
Thomas McAnnally	101		11	Ireland	White	August 21				Old Age.
Patrick Noonan	100	5		Ireland	White	October 6				Old Age.
James Quinn	100	10	18	Ireland	White	November 30				Old Age.

1866.

Mary McMahon	104			New York	White	January 13	Life			Old Age.
William Daily	106			Ireland	White	May 4				Old Age.
Mary Ann Bastine	118			New York	Colored	May 15	Life			Old Age.
Mary Griffin	100			Ireland	White	July 17				Old Age.
Bridget Noonan	100			Ireland	White	August 1				Cholera.
Margaret Farel	100			Ireland	White	September 12				Old Age.
Phyllis Bees	105			New York	Colored	December 7	Life			Old Age.

1865.

Rebecca Ward	100			Scotland	White	February 10	67 years		Widowed.	Old Age.
Margaret Harty	100			Ireland	White	January 6	17 years			Old Age.
Emilie C. Lorenz	103			Germany	White	March 25	18 years	Married		Old Age.
Judy Green	109			New York		May 13	Life		Widowed.	Old Age.

Concerning the personal habits, peculiarities, and idosyncrasies of those who form this long list of *centenarians*, very little is known. Such facts as we have, gathered mainly from the relatives and friends of a few of the number, are nevertheless worthy of note.

1. *William Daily* was born in Kelleren, Ireland. His father lived 103 years, and a sister attained the same age. He was below the medium height, measuring only 5 feet 3 inches, but had a very compact physical structure, with a large head and well-developed chest. He was an extensive farmer, and in early life a hard-worker. After reaching New York, in 1848, his life was quiet and inactive, but temperate and abstemious. He was twice married: the first time when 30 years of age, and during this union became the father of seven children, three of whom are still living. He had no children by the second marriage. He had great physical strength, was quiet and peaceable in his habits and manners, and retained his mental and bodily vigor until a short time before his death. He seemed to require very little sleep, frequently finding two or three hours sufficient, during the night, and seldom sleeping during the day. He used tea and coffee in moderate quantities, and, during the latter part of his life, rarely tasted alcoholic stimulants of any kind. His *final sickness* is also said to have been his *first*.

2. *Phyllis Bees* (colored) was born in the city of New York, of slave parents, in 1761, and was baptized in Old Trinity Church. She was held as a slave until 1803, in which year she was manumitted, her papers being signed by Colonel Marinas Willett, then Mayor of this city. Cooking was the occupation of her life, and she is said never to have served in any other capacity. She was twice married, but had no children. She had a large frame, was somewhat spare in flesh, and was of pure African blood. She suffered for some time a peculiar religious monomania, which manifested itself only at night. During the day she was comparatively quiet. Her mind began to fail about ten years before her death; but she had rarely been sick, and, with the exception of some bronchitis, her general health was very good, until within a week of her demise, when she was prostrated by general debility, rather than by any specific disease.

3. *Emilie C. Lorenz* was born in Germany, December 16, 1763, 1763. At the advanced age of 85, she emigrated to this country, and passed the remainder of her life in New York city. She lived

married 35 years, but had no children. She retained her mental and physical vigor to a remarkable degree, until about six weeks before her death.

4. *Judy Green* was born at Fishkill, New York, a slave of Isaac Storms, in 1758. Her father was an African and her mother a squaw. When a young woman, she was sold to Cornelius Roosevelt, of this city, in whose family she lived about six years. She then absconded, and for the next two years lived with Lindley Murray, during which time she attained her freedom. She then married, and became the mother of four children, two of whom died in infancy, the third of phthisis, and the fourth of delirium tremens. She was employed as cook in various families, until, at the age of 89, she became an inmate of the Colored Home. She had cholera in 1832, lived through attacks of measles and smallpox, and for many years was subject to frequent attacks of rheumatism. She was temperate in her habits, and never indulged in alcoholic drinks. On May 13, 1867, she was seized with epileptiform convulsions, which followed each other in rapid succession, for two hours, and then terminated in death.

We would call attention to the fact that these centenarians, who made their way through their humble and laborious duties until they had passed quite beyond their hundredth span of the "bridge of life," possessed good powers of assimilation, and that their food, like their labor, was invigorating and abundant.

The Board of Health will not fail to appreciate the good will and attention of the physicians and other citizens, who continue to forward to this bureau the personal records of rare events and important diseases.

The following record of all deaths above the age of 80 years is appended, to show how strikingly the fact is illustrated, that woman endures the perils incident to the later periods of life better than man:

Deaths at Eighty Years of Age and Upward, in the Twelve Months ending September, 1867.

Ages	80-85		85-90		90-95		95-100		100 and upward.		Total by sexes.		Grand total.
Sexes	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	
Deaths	86	118	36	62	8	23	4	13	..	4	134	220	354

DISEASES AND MORTALITY IN THE PUBLIC IMSTITUTIONS IN THE METROPOLITAN DISTRICT.

A statistical summary, under this head, will accompany the report that is to be submitted January 5th, upon the Death Records of the two cities for the three months ending the last week of 1867.

Diseases and Mortality of Seamen in the Port of New York.—In the summary mentioned in the preceding paragraph will be found the record of deaths of seamen in hospitals; but we here state that one hundred and twenty-one of the deaths registered in New York the past year, were deaths of seamen. Of these, more than half died in city hospitals, and most of the others in boarding-houses and other dwellings, and on shipboard at the wharves of these cities. Some of these decedents were brought into port in a dying condition.

It was found that nearly half of these seamen died of phthisis, and many others came to their death by rheumatic and heart diseases. And in the report that is to be appended, the fact appears that this hardy and roughly-used class of men, whose sinews are so necessary to the world's commerce, have a short life, and suffer many forms of fatal disease that are both agonizing and preventable. The forecastle of the merchant ship, even in the proudest steamships, is equalled in unhealthfulness only by the reeking slums termed "sailors' boarding houses," in the First and Fourth wards of New York.

The Quarantine Diseases and Mortality.—The Health Officer, John Swinburne, reports to the Board of Health that 250 ships were quarantined for sickness on board, and that 1,030 cases of sickness and 384 deaths occurred in those vessels during passage and in port. Of the sick that arrived at Quarantine 257 were treated in the Floating Hospital; and of these 60 died. The death-rate in the total number of the sick was 372.8 in the 1,000, or 37.28 per cent.; while in the 257 patients admitted to the Floating Hospital the death-rate was equivalent to 233.4 per 1,000, or 23.34 per cent. on the admissions.

Yellow fever occurred on passage and in port in 75 vessels; the total number of sick with that fever was 390, of whom 112 were fatal. Cholera occurred upon three emigrant ships, in which there were 1,569 passengers, 133 of whom perished by this pestilence.

Events of marvelously instructive interest to sanitary science have occurred during the past two years at the Quarantine anchorage. The New York Quarantine establishment, indeed, has been a great school of hygiene, and, as the number of emigrant passengers that pass its inspection or enjoy its benefits every year exceeds the aggregate of emigrants similarly exposed to incubative infections at sea, on voyages so *precisely adapted* to *bring* great numbers of sick together with the worst fever-poisons, that arrive at all the other ports of this continent combined, and far more than arrive at all the ports of Europe under like sanitary circumstances, it has become highly desirable that not an event should go unnoticed that can throw light upon maritime and naval hygiene, or upon the history and prevention of pestilential infection.

As Corresponding Secretary and Registrar of the Board of Health, the writer takes this opportunity publicly to acknowledge the courtesy and kindness of the Health Officer and his deputies, who have given him great facilities for personal inquiries upon the ships at Quarantine. Menaced by yellow fever, and by cholera from foreign ports, the central office of the Board of Health needed constant information upon every event relating to these and all other diseases at Quarantine.

The only events to which, in this report, it seems dutiful to make any special allusion, were the following, to wit:

(1.) Neither in 1866 nor 1867 did we succeed in tracing a single case of cholera (occurring in New York) to the Quarantine anchorage, nor to any ships, goods or immigrants just arrived.

(2.) The Hospital Ship *Falcon* has remained uninfected from cholera as well as yellow fever, as the writer predicted it would if the sanitary methods and rules continue to be maintained as he established them in the first organization of that institution, in 1859.

(3.) The *three fatal cases of Yellow Fever* that occurred in New York, and the *one unequivocal case* in Brooklyn, were directly traced to the ships whence they came, and the true source of the infection that killed them was ascertained.

(4.) The sickness that occurred upon the Italian bark *Chiara* was anomalous, and unrecognizable as a clearly pronounced and unequivocal form of fever. It could not really be called a *fever*, for it was a kind of putrid disease that is believed to arise exclusively from filth in ships, sewers, and the like. Its only peculiar characteristic was that which certain poisonous effluvia produce. The temperature of the body was constantly cooler than natural, the blood rapidly lost its red corpuscles by some zymosis that destroyed them, (and *this* it was that induced so much anxiety and doubt concerning the *Chiara's* sick men); the natural function of the kidneys was abundantly maintained in all these sick men, and, of the three that died, the one that was carefully dissected yielded pus and purulent fluids in all the cavities of the serous membranes, and in the liver and other viscera,—a morbid result never witnessed in the vast number of yellow fever post-mortem inspections which the writer has made in former years.

What that disease was, and how it was engendered, need not be discussed here, for these questions involve many points that are purely medical. But the most essential lesson which the *Chiara's* misfortunes taught, was this: that certain ships may arrive at the wharves of New York and Brooklyn in an apparently safe sanitary condition, and yet be foul with filth and putrescence in the hold and bilge, and may likewise have, in the bottom of the cargo, such masses of rotteness as will create an endemic pestilence, which will not only endanger the lives of all persons on board, but of all who are exposed to the effluvia from the ship and its filth; and, moreover, that in such instances there is the greatest necessity, both for immediate sanitary control of the pestiferous ship, and all that pertains to it.

The name of the disease in such anomalous cases is far less important than the one essential fact that it is malignant, and from or by the ship and its hoarded filth, is *communicable.** Even were it possible to adopt the hypothesis that the *Chiara* became infected with yellow fever by any of its exposures on her way up the harbor, or at the wharf, or, even that it was a spontaneous outbreak of yellow fever (neither of which hypotheses is tenable since the entire body of evidence has been reviewed), such an exceptional mode of infection would chiefly show how perilous is the putrescence on board, which rendered such a mode of infection possible.

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* The outbreak of a malignant *typh*-poison in ships with putrid cargoes occasionally baffles the skill of the physician, and almost compels us to accept the simple but unscientific term, "putrid zymosis" in describing such cases. A sudden death occurred last Spring on board a canal boat, loaded with rotten potatoes, and as the patient (the proprietor and constant resident of the boat) exhibited the symptoms that chiefly characterize the "spotted fever" or "cerebro-spinal-meningitis," the certificate of death was in accordance with the latter view of the case; but the *real cause* of that death was so clearly a putrid poison that was found where the man slept at night, and worked by day, that the expert Sanitary Inspector and pathologists who investigated the case declared that the cause was a "malignant typh-poison."

Though such diseases may not be contagious from person to person, they are endemically infectious in the same sense as yellow fever is an endemic infection. And persons who are killed by the kind of putrescence here referred to, seem almost literally to pass into a kind of zymotic putridity, as truly as potatoes do from the effect of exposure to that pestilential little fungus the *Botrytis infestans* which causes or actually is the "potato disease."

The sanitary inspection of certain ships while unloading their cargoes at the wharves of the city, would seem to be quite as necessary as any inspection can be for that class of vessels at the Quarantine anchorage. There also exists a manifest necessity for providing in each of the cities a fever-refuge, properly situated, and having adequate arrangements for temporarily admitting seamen and other homeless persons who chance to fall sick with any pestilential disease while in ships at the wharves, or in boarding-houses and elsewhere. The *Chiara's* men were refused admission at several of the hospitals for seamen, merely because of hospital "by-laws" that reject all infectious fevers; and creditable it was for the Kings County Alms Hospital to open its wards to them by request of Deputy Sanitary Superintendent, Dr. Conkling, Brooklyn.

The Quarantine anchorage is too distant to meet exigencies of this kind that are constantly occurring in the city. Even the hospitals on Blackwell's and Ward's Islands are too distant to answer the requirements in certain cases, and would still be so though there was no delay in transportation thither.

The two conclusions which we here record, are: (1) that a fever-refuge for urgent, casual and anomalous cases of pestilential (real or suspected) disease, that mostly occur among homeless or transient persons, would tend greatly to prevent both danger and public alarm from such occurrences: (2) that a sanitary inspection of vessels, at the wharves or near them, which are liable to engender or become carriers of dangerous diseases, would greatly add to the public safety, and lead to humane and timely care of many sick seamen.

The *Fever Hospital*, which has been in operation on Blackwell's Island since 1863, has most practically illustrated the economy and great usefulness of such well-devised arrangements for both isolating the fever-sick, and giving them every hygienic advantage. The experience of the Floating Hospital at Quarantine has also proved that an unusual success in medical treatment results from such immediate care of the sick, such perfection of ventilation, and such avoidance of delay and injury by transportation of the patients as has been illustrated in that important lazaretto.

We have thus referred to this subject of quarantineable causes of death because the various transportable kinds of disease have so large a share in the mortality and the perils of the Metropolitan population, and because they claim so largely the anxious attention of this Bureau and the executive officers of the Board of Health.

Upon no other class of facts relating to the protection of the public health is there more urgent necessity for the adoption of comprehensive and scientifically correct methods for ensuring the highest degree of protection to the public health, together with the greatest general benefits to society at large.

Statistics of Disease.—Sickness Rates.—The diseases that are most active in destroying life are particularly designated in our abstracts of the records of death. But while it appears that various of these records, as shown by the abstracts in the present report, bear witness to the fact that the population in certain wards suffers vastly more than its *pro rata* share in particular kinds of death, there exist no public records of *sickness*, except the incomplete registration of the contagious diseases. But these *registered enemies of life* will, henceforth, be far less liable to make their fatal aggressions, now that their lurking-places are daily reported, and their highways are mapped out. This is a hopeful beginning in a work that promises much good.

Impracticable as it may be to obtain yearly records of the "non-contagious" diseases, there, nevertheless, are means by which we may ascertain both the ratio and kind of diseases that are suffered by certain classes. The sanitary records of the Metropolitan Police and of the Metropolitan Fire Department, and the sickness in various large manufactories, and among particular classes of workmen, are available for this purpose. Moreover, it is both practicable and desirable to know, from time to time, the ratio and the kinds of sickness that are found in certain kinds of dwelling-houses, and in the population of a particular locality. In the sanitary survey of the metropolis, which was conducted under the writer's supervision in 1864–65, this kind of inquiry in vital statistics guided to the most important conclusions.

The public may, every week, hear that the death-rate in the city is far *too high*, and that it is highest in the First, Sixth and Eleventh wards; but when the fact is demonstrated that the inhabitants of a particular tenant-house or block suffer not only a death-rate that is ninety per cent. higher than that in domiciles which are of a better kind, or that are removed from the vicinity of miasmatic grounds and nuisances; or, when the statistics of a year's experience show that printers and compositors, seamstresses and factory hands, and the children in primary schools, suffer thrice as much sickness and a vastly higher death-rate than similar classes of persons who breathe pure air, then will the work of sanitary improvement be understood and aided by all classes."*

The most trustworthy records of sickness and disease we are able to present in this place to illustrate the practical value of this *most vital* class of the "vital statistics," are furnished by the Metropolitan Police force. This well-selected, but much exposed body of men, numbering, at present, 2,561 patrolmen and officers of all grades, has its medical record carefully kept day by day. The following summary, which we have caused to be tabulated, from the police medical register is instructive:

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* In prosecuting the sanitary survey of New York city, in 1864–65, the Council of Hygiene of the Citizens' Association found that, in every special research into the relation of the sickness-rate—that is, the number constantly sick to the population—where there was a high death-rate, there co-existed a ratio of disease that increased from a normal sickness rate, in *a geometrical ratio,* as the death-rates increased in an arithmetical ratio. In the worst classes of tenant-houses, the ratio of the constantly sick, to the total number of inhabitants, ranged from 1 in 8 to 1 in 4 continually on the sick list.

Mr. Neison, a great authority in vital statistics in England, has shown that, taken in a large way, there will always be found to be two persons constantly sick for every death that occurs in a year, in the English towns. Plainly, then, this ratio of sickness to deaths would show that, if the same rule holds true in New York, there were 46,886 people *constantly* sick and needing medical care every day in the past year, for there were 23,443 deaths. In taking the census of Ireland, Sir William Wilde found that, in the city of Dublin, in which the census was taken in a single night, there were 5,646 persons seriously sick and disabled in a population—total of Dublin—of 254,293 inhabitants. This is the lowest sickness-rate of which we have found any record in a large city. It is 22.22 sick in every 1,000 of the living. Generally, the rule holds true, in all large masses of population, that, in the course of an entire year, two will be constantly sick, throughout the 365 days, for every death that occurs, in the same population. The fact which was ascertained by Dr. Lyon Playfair, that there were, in a certain district of England, 28 *cases* of sickness and disability to every death, is, perhaps, a less constant fact than that, in a large way, we find two or more persons *constantly* sick for every death. It will be observed that the Metropolitan Police sickness and death-record harmonize with both these rules. This will occur only in populations or classes that suffer kinds of sickness which are of longer duration in each case than the usual average length of each sick person in a whole community. According to the principles thus deduced, from the largest bodies of sickness and disease statistics hitherto acquired, it is safe to say that, for the 23,443 deaths in New York. the past 12 months, there were at least 46,886 of the city inhabitants constantly on the sick and disabled list; and that, if the less uniform, but practically correct rule be true, concerning the number of persons that become sick (number of *cases* of sickness), for every death that occurs, then there were no less than 656,404 cases of sickness in the city during the year. Let every person derive from such facts the great lessons they teach, regarding hygiene as a great economizer of health and life.

Sickness-Rates and Death-Rates in the Metropolitan Police, in the Years 1864, 1865, 1866, *and* 1867.

YEAR.	Total number of men.	Total days sick or disabled.	Average number of days of sickness per man.	Average number of men constantly sick per 1,000 men.	Total number of deaths.	Death-rate per 1,000 men.
1864..........	2,014	24,455	12 1-8	33.26 (or 3⅓ per cent.)	31	15.44
1865..........	2,369	27,546	12 4-5	35.44 (or 3½ per cent.)	24	14.35
1866..........	2,401	30,859	12 4-5	35.21 (or 3½ per cent.)	24	9.99
1867..........	2,543	25,527	8 1-2	27 49 (or 2¾ per cent.)	24	9.60

An inspection of this record shows that the sickness-rate among the policemen has greatly decreased during the past year. The chief cause of this saving of health is reported to consist, mainly, in a single improvement for the comfort and health of the men in their temporary dormitories at the station-houses—and this single provision for health and comfort consists solely in a well-enforced rule that requires the men to remove their clothing on retiring to bed, in a healthful way, and in the improved sanitary care of the bedding and bed-rooms; whereas most of the men, when on post-duty at night, formerly slept in those places with their clothing on.

This saving of health in the police force is equivalent to the constant service of 11⅓ men for an entire year! At the same time, the chance for prolonged and useful life has been correspondingly increased in the total number of more than 2,000 patrolmen—a beneficial result that has been brought about by a well-considered and faithfully-executed order of the Superintendent of Police* These facts are mentioned to illustrate some of the practical lessons that are derived from definite information upon the subject of sickness-rates and preventable diseases.

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* We are permitted to copy the official order that secured these results:

CENTRAL OFFICE OF THE METROPOLITAN POLICE,
300 MULBERRY STREET, N. Y., *June* 9, 1866.

"*Resolved,* That it shall be the duty of captains, sergeants, and patrolmen, to furnish themselves with good and comfortable beds, for use in the station-house, which they are to keep clean and in good order, and cause to be regularly and carefully made up once in each day; the sheets and pillow-slips to be changed at least once in each week. They shall, when retiring for sleep, divest themselves of all garments worn while on duty, using a night-shirt for sleeping; their clothing, meanwhile, to be so placed as to be ventilated and dried. They are also to keep their persons well washed and scrupulously clean."

By order of the Board of Police Commissioners.

(Signed) JOHN A. KENNEDY,
Superintendent of Metropolitan Police.

It is to be hoped that the Fire Department will adopt systematic sanitary regulations, and careful medical registration of sickness and debility in its force, as has been done by the police; and it would be to the advantage of every great employer of labor to do likewise.

The Cemeteries.

The subjoined summary exhibits the records of Interments from New York and Brooklyn in the several cemeteries within or near the Metropolitan District.

Note.—The subjects presented in the present and the previous year's report of the Bureau correspond with the classified branches of labor which are conducted in this department of the sanitary service. The *first* object of all this labor is to ascertain the conditions under which human life is needlessly wasted and destroyed; the *second* object is to maintain an accurate and comprehensive system of vital statistics; and the *third* object is to associate these first necessities of the Bureau with such methods of exact and practical applications of sanitary knowledge as will aid the Board of Health and benefit the people. These classified duties may be enumerated as follows.

I.—*Relating to Causes of Death.*

(*a.*) With regard to a correct and full statement of the pathological events that should be known or recorded concerning each death.

(*b.*) With regard to the localities in which epidemic and other preventable causes of sickness and mortality are found te exist.

(*c.*) With special regard to the faulty conditions of housing and domiciliary hygiene, that can be ascertained to act as causes of preventable disease and mortality.

(*d.*) With regard to occupations, personal and social conditions, hurtfully conducted trades, and the neglect of sanitary care in various ways.

(*e.*) With regard to violent, sudden, accidental, and the various causes of death or of sickness resulting from culpable neglect, the returns of Coroners, and the verdicts of Coroners' juries.

II.—*The Progress and Exact Applications of Sanitary Knowledge.*

(*f.*) With regard to the sanitary influence and relations of habitations, and in regard to food-articles and beverages of the poor and dependent classes.

(*g.*) With regard to the special applications of sanitary chemistry, particularly with reference to the points mentioned (in section *f*), and with reference to the hygienic questions connected with water-supply, and disinfection and cleansing. [This branch of inquiry and record has been well commenced, but the chief contribution to it has been a voluntary one by Prof. Chandler, of Columbia College.]

III. *The Application of Sanitary Regulations in the care of the Remains of the Dead, the Records and Regulation of Burials, and the transit of Dead Bodies.*

IV.—*The Permanent Registration of Births, Marriages and Deaths.*

V.—*The Permanent Recording and Systematic Tabulation of Events, Statistics and results of Inquiry regarding Epidemic and Preventable Diseases, and their Associated Causes.*

VI. *The Registration of Physical Phenomena which hold important Relations to the Preventable Causes of Disease.*

VII.—*To maintain such Correspondence and Exchanges for the promotion of Sanitary Information, that the Board of Health shall be aided in its duties, while the progress and practical applications of Sanitary Knowledge, and the highest uses of vital statistics, shall be generally promoted.*

By distribution of all this labor into hands specially qualified, and by virtue of the unity of plan upon which the work is pursued, this department of sanitary service is economically conducted. The *personnel* of the Bureau, besides the Registrar, consists of seven clerks, who are wholly engaged in merely clerical labors; the excellent Chief Clerk, Mr. John Bowne, to whom is committed the supervision of the general clerical work, and of all details that pertain to the records of marriages and births; and lastly, an assistant in that branch of inquiry and records relating to epidemiology and domestic hygiene—the valuable labors of Norris R. Norton being given in this portion of the work. And in this place the fact should be mentioned that physicians in all portions of the Metropolitan District voluntarily contribute most valuable information relating to prevalent diseases which occur in their practice; and that the medical officers of hospitals and other public institutions are frequent contributors of important information relating to the sources and results of preventable diseases.

Return of Interments in different Cemeteries, for the City and County of New York, during the year ending September 30, 1867.

TOTAL NUMBER OF INTERMENTS.	CEMETERIES.															
	Calvary.	Greenwood.	City.	Lutheran.	Outside the Metropolitan District.	Cypress Hills.	Evergreens.	Union.	New York Bay.	Trinity.	Flatbush.	Westchester.	Marble.	Woodlawn.	St. Mark's.	Mt. Olivet, Macpelah, Washington, Mount Pleasant, Friends', and interments in various other burial-places within the Metropolitan District.
23,443	8,891	3,026	2,954	2,276	1,668	1,358	1,191	691	364	277	252	98	97	79	59	162

*Return of Interments in different Cemeteries, for the City of Brooklyn, during the year ending September 30, 1867.**

TOTAL NUMBER OF INTERMENTS.	CEMETERIES.															
	Calvary.	Greenwood.	City.	Lutheran.	Outside the Metropolitan District.	Cypress Hills.	Evergreens.	Union.	New York Bay.	Flatbush.	Westchester.	Marble.	Woodlawn.	St. Mark's.	Trinity.	New York City.	Mt. Olivet, Macphelah, Washington, Mount Pleasant, Friends', and other Cemeteries within the Metropolitan District.
9,214	890	1,995	438	626	432	632	1,313	158	27	2,419	17	....	....	..	..	25	243

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* The total number of interments, as shown by this summary, is 9,214; of these there were 625 burials from institutions and streets beyond city limits of B'klyn.

It will be noticed that but few interments are now being made at any point south of One Hundred and Sixteenth street in New York. The officers who have charge of the various cemeteries have faithfully complied with all regulations of the Board of Health concerning burial permits, &c. The fact that there still exist within city limits in New York a considerable number of these resting-places of the dead, and that some of them are situated in densely-populated districts, renders it desirable that the facilities and inducements for interments in rural cemeteries should be so increased that all pleas of necessity for the burial of the dead in any portions of this city, lying south of One Hundred and Fiftieth street, will be removed. Indeed it were well if all intramural interments could be wholly avoided.*

The statistics of burials exhibit the fact that 8,891 interments—or 39.91 per cent. of all the city dead—were interred in *Calvary Cemetery*, which is the principal burial-ground of the Roman Catholic Church. The records of this "city of the dead," when added to those of the Catholic cemetery at Flatbush, and in their two or three intramural burial places, exhibit singularly instructive records of the nationalities and ages of the decedents belonging to that religious denomination.

Greenwood Cemetery stands next in the importance of its list of the dead; for 2,954 burials from the city of New York were made in that beautiful ground (13.28 per cent.); while the *Lutheran Cemetery* (situated near Middle Village, on the Jamaica Turnpike,) received 10.22 per cent. of all the burials from New York; the cemetery at *Cypress Hill*, situated in the south-eastern extremity of Newtown, received 1,358, or 6.09 per cent.; and the *Evergreens*—which is half within and half without the Eighteenth Ward and city limits of Brooklyn—received 5.34 per cent.; various cemeteries near, but outside, the limits of the Metropolitan District, received 1,668, or 7.49 per cent. of the dead; and, lastly, the *Potter's Field*—the "City Cemetery"—received 13.26 per cent., or 2,954 of the dead; these were the homeless and the friendless dead, whom the Commissioners of Public Charities, and the Commissioners of Emigration, buried in the eastern grounds of Ward's Island, a beautiful place, but too near a dense population, and to a great assemblage of hospitals and asylums, to be much longer permitted. The health of the Emigrant Refuge and Hospitals, and the great Asylum for Inebriates on that island, will ere long suffer from the presence of this vast burial-ground. We alluded to this subject in last year's report. It will be a duty to continue to mention and urge its important bearings on the healthfulness of the neighborhood every year, until the State shall order and provide for the removal of this Aceldama to a locality remote from public asylums or other dense populations.

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* During the entire summer and autumn of 1866, and throughout the hot season in 1867, all burial-places south of 125th street in New York were closed as a prudential regulation.

SEARCHES OF THE PUBLIC RECORDS, AND TRANSCRIPTS FROM THEM.

The total number of transcripts which have been made out from the public registers of births, deaths, and marriages the past year, is 796. The total number of *searches* that have been made for records of one or the other of these three events of personal history amounted to no less than about *two thousand.* In vain are made many of the most necessitous applications for the information which the registers of vital statistics should never fail to contain. The registration of marriages is but just beginning to be reasonably complete, and that of births had little value until recently.

The vast amount of toil which such searching of public records requires of the clerks in the three branches of registration, would seem to require that to prevent needless impositions by mere speculators who may offer our transcripts to their clients, the applicants for them should first pay a reasonable fee into the treasury. Let the widow, the orphan, the soldier, and the poor, have their searches and transcripts gratuitously, but let the registers have such a safeguard as a fee to the treasury would be, from all other applicants for searches. This is required in every other city in which there exists a good system of vital registration.

CORRESPONDENCE OF THE BUREAU.

To the chief officers of vital registration in each city and State where such registration is attempted, we are under obligations for courtesies and reports. To the chief vital statists and hygienists in Europe we acknowledge with gratitude their valuable correspondence and reports. Special thanks are due to Dr. Wm. Farr and Dr. John Simon, of London; Prof. Pettenkofer, of Munich; Dr. Lombard, of Geneva, and Miss Nightingale, the acknowledged leaders in sanitary science in Europe.

To the medical profession not only in the two cities, but throughout the State and in every city in the Union, the Board of Health is indebted for cordial and intelligent approval and support of its efforts to make vital registration an effective department of public hygiene.

THE APPLICATION OF VITAL STATISTICS TO QUESTIONS OF PUBLIC ECONOMY.

Though every person should have a rational concern in the decision of questions that determine the "chances of life" in the different social and physical conditions of particular classes, occupations and ages, we find such an embodiment of practical interest in these questions in the business and principles of life insurance and all kinds of annuity funds, that there will not fail to be ere long a demand upon the Bureau of Vital Statistics for such aid as its improved registration can give. This fact has been kept in view in the organization and execution of all our methods for obtaining and recording the elements of a perfect registry.

At this early period it would be premature to attempt any final deductions in regard to principles that already begin to appear in the statistical handling of our records of the causes and circumstances of death, and the ages, occupations, nativity and social status of the decedents. But we unhesitatingly point to the statistical abstracts in this report for some useful information concerning these questions. The aim has been, in these abstracts, to make complete statements upon all points of information that are found to be *unexceptionally accurate* and full, both as respects the individual records and the totality of such records.* Upon the many points of curious but not very useful information, the Registrar has neither the time nor wish to report; for, to make the study of life and health directly useful in discovering and applying means for saving them has, from the first, been the chief duty. The time will soon come, however, when a skillful actuary can draw from this vital registration and the sanitary studies thereon, such revised principles as life insurance corporations, and all transactions that are based on the "*chances of life*," plainly begin to require in this country. No duty can be more obvious than that the State should, from motives of public economy, provide and put into thorough operation a system of vital registration, based upon the principles that are illustrated in this report. With this, and other most important ends in public economy, the next census (in 1870) should not fail to be made as skillfully and as exhaustingly accurate as the English census has become.

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* There still exists a defect in the records of *occupations* of the decedents, but it is believed that this will soon be overcome by the aid which physicians and undertakers are giving in this particular.

This report, like that of the preceding nine months, presents, mainly, the *organization* and bare statistics of a branch of public hygiene that, in the rapid progress of sanitary information, had come to be an indispensable necessity to any intelligent and permanently effective plans or principles of health governments, and much more have such vital and sanitary studies become indispensable as a basis for setting forth, in any useful and instructive way, the practical teachings of hygiene. But these first reports have necessarily embodied only in a fragmentary manner, some of the chief lessons gleaned from whatever statistical and sanitary information has been found most trustworthy, as well as publicly needful.

In the report of Dr. R. Cresson Stiles, the Deputy Registrar, Brooklyn, will be found an important and well-digested body of information. The business of the Brooklyn branch of the Bureau continues to be conducted in entire unison with the plans of the central office in New York; and the eminent ability of its chief officer in physiology, pathology, and microscopy, has essentially aided in many inquiries connected with unusual causes of disease and death.

Condensed abstracts of the returns for the three months to end on the 31st of December [*Appended Statement No. I.*] will be appended hereto when this report goes to press. There also will be submitted, at the same time, a memorandum upon the Meteorological Phenomena in the year 1867 [*Appended Statement No. II.*]; a series of analyses of Croton and other Drinking Waters in the city of New York, by Prof. Chandler, of Columbia College [*Appended Statement No. III.*]; and [*Appended Statement No. IV.*] the Vital Statistics of the Hospitals and other Public Institutions for 1867.

Concluding Remark.

It is as true to-day as ever that "all a man hath will he give for his life," and, in closing a report that has to deal so inquisitively with the *causes* that brings our fellow-beings to the

* * * "Last scene of all,
That ends this strange, eventful history,"

there are a few plain truths which duty requires us to notice.

First—The excessive waste of human life in the metropolis is clearly proved to be dependent, mainly, upon preventable causes, that cannot be permanently overcome without persistent effort to give examples and practical instruction in hygiene.

Second—That the almost exampled ratio of infant mortality in New York and Brooklyn is not distributed over all sections of these cities alike, but is associated with actual and discovered sources of unhealthfulness in the dwellings, neighborhoods, and classes that suffer this needless slaughter of the innocents; and that the same places and classes suffer an excessive death-rate in all the periods of life. And, further, that owing to the utterly dependent and unenlightened condition of these unhealthy masses they have, in effect, no election against the circumstances that compel the sacrifice they are constantly making to disease and death. To six hundred thousand of the inhabitants of the two cities, who thus have no election of the necessary means for healthy living, a high death-rate and a pauperizing and debilitating amount of disease is *a fate from which sanitary improvements alone can rescue them.*

Third—A *constantly low death-rate* in all such sections of the metropolis as are most completely free from the local and domestic sources of disease, is a fact well established by the past eighteen months' observations; while, on the other had, a *constantly high death-rate* is the typical characteristic of the districts that are suffering from the contrary hygienic conditions.

Health laws, faithfully executed, will continue to reduce the death-rates; and there needs to be added to their good working still other and more permanent life-saving agencies, for, whichever way we turn to search out the most deep-rooted, far-reaching causes of excessive mortality of infants, high death-rates, disabling sickness, and low vitality among the unhealthful classes in New York, the fact appears that the people " perish for lack of knowledge." Even much of the unworthy life that exists in these great cities, is but the combined product of ignorance and vicious self-indulgence. No health-laws will wholly uproot the inevitable products of such planting. Therefore, in this, which is one of the greatest and most permanent labors for the public health, every well-wisher for his fellow-beings should be urged to share. Instruction concerning the laws of hygiene should by all means go hand in hand with the execution of the laws of Sanitary Code..

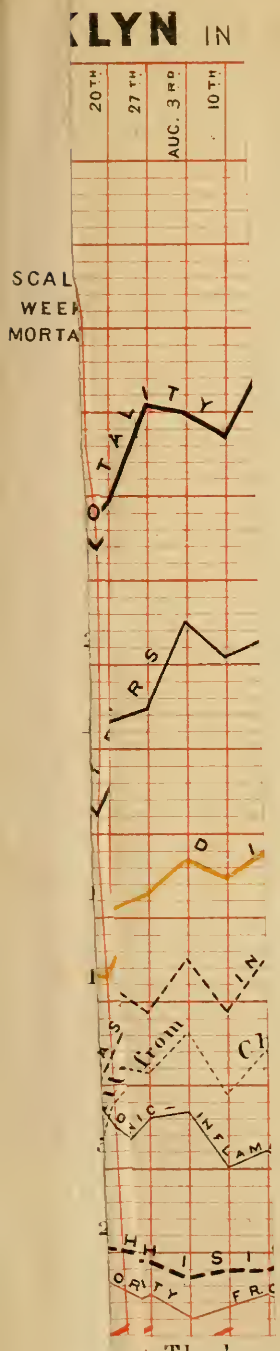
Most desirable is it that every sick-chamber and every hospital ward should be made the place and the occasion of complete practical instruction in personal and domestic hygiene. The physician is the natural and ever-willing teacher of such knowledge; and in the charities and care that Heaven has inclined women to give to the needy sick, she too may become a missionary of health and of most permanently useful instruction to the ignorant poor. Already some of the metropolitan hospitals are rapidly becoming schools of practical hygiene, and the surgeon proves to be one of the best of teachers of this science, when he calls about him his pupils to witness in the very appearance and condition of wounds the delicate evidences of the deadly effects of foul air, on the one hand, and of the salutary influence of fresh air, cleanliness and hygienic care on the other hand.

Human physiology, hygiene, and chemistry in its applications to common life, have come to be easily understood by all who seek such knowledge; and they afford, withal, such powers and incentives for the protection of health, that to neglect them as necessary branches of school education is to deprive the rising generation and the public of great sanitary and social benefits.

Year by year some gain to the average length of human life certainly should be proved by the statistics of a decreasing death-rate, but the total gain in the number lives saved from the grave, in every thousand of the population, shows only a mere fraction of the actual gain to the value and usefulness of the aggregate of life in the whole metropolis, because the gain to the common stock of healthy and vigorous life, in a population, is twenty-fold greater than the few added years of wordly comfort and usefulness that are represented by the number of persons, at given ages, saved from premature death.

No statistics can fully set forth the benefits which increased health and invigorated life confer. The public economist, the moralist, and the philanthropist, together claim this boon for society, and it is not easy to say whether the moral or the purely physical blessings of health and length of life most urgently demand an unceasing effort to give to all our fellow-beings *the means of* HEALTHY LIVING.

Respectfully submitted,
ELISHA HARRIS, M. D.,
Registrar and Corresponding Secretary,
Metropolitan Board of Health.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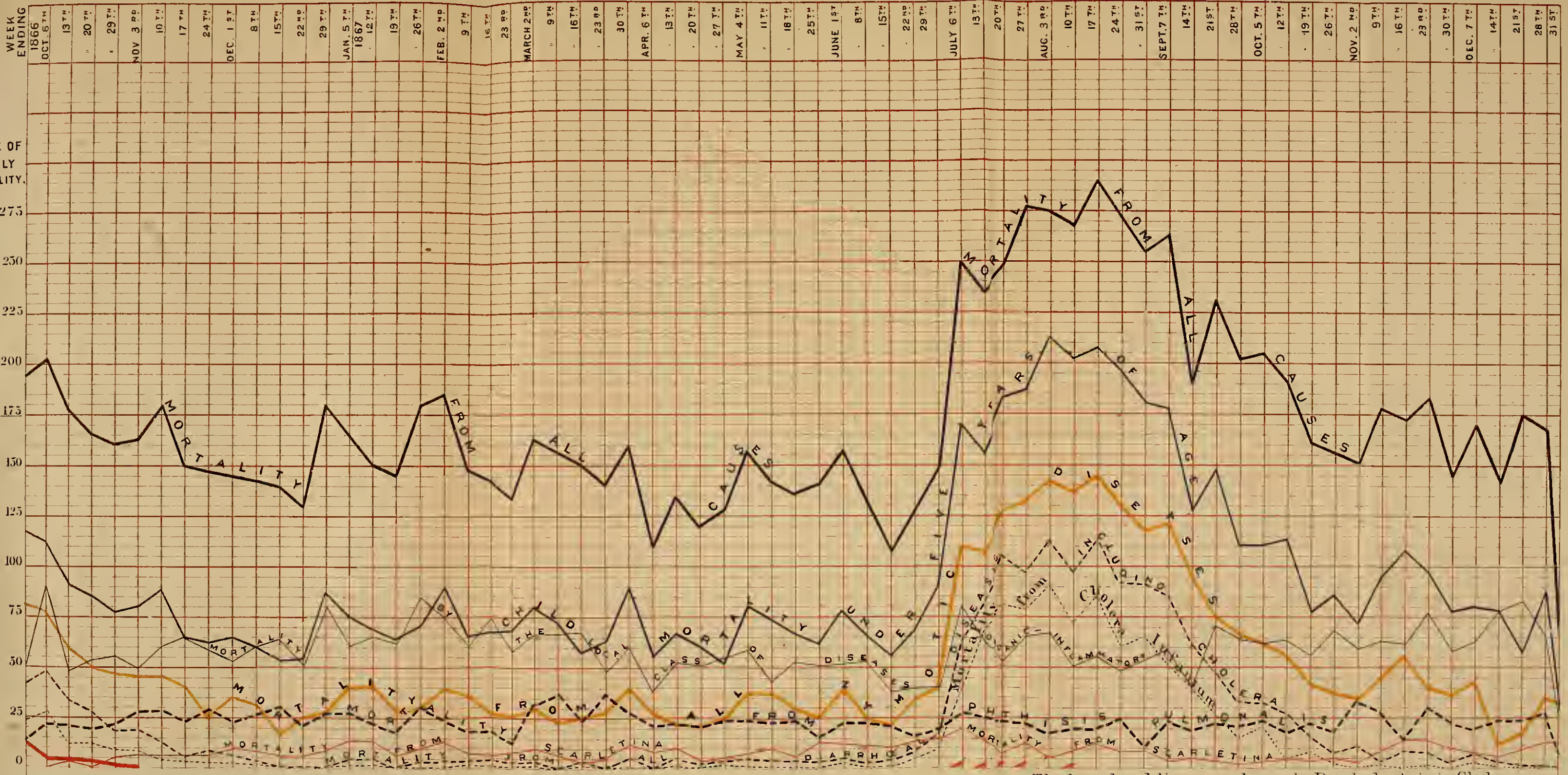
THE COURSE OF THE TOTAL MORTALITY AND THE CHIEF FATAL DISEASES IN BROOKLYN IN THE 15 MONTHS ENDING DECEMBER 31ST 1867.



☞ The broad red line ▬ shows the Deaths by Asiatic Cholera.

PREPARED UNDER THE DIRECTION OF THE REGISTRAR OF VITAL STATISTICS BY DR. F. J. RANDALL.

FROM OUTLINES FURNISHED BY DR R. C. STILES, DEPUTY REGISTRAR

REPORT

OF THE

DEPUTY REGISTRAR, BROOKLYN.

Bureau of Vital Statistics,
Metropolitan Board of Health,
Brooklyn, *November* 15, 1867.

Elisha Harris, M. D., *Registrar of Vital Statistics:*

Sir: The accompanying tabulations of the vital statistics of Brooklyn for the past year, afford gratifying evidence of a decided improvement in the statistical record in completeness and permanent value. The present report embraces the returns of an entire year, from October 1, 1866, to September 30, 1867. The physicians of this city have manifested increasing willingness to furnish full and accurate statistical information, giving evidence that their interest has been awakened in the scientific results which it lies in their power to further, and in the credit of their city for so important an element and evidence of civilization as that of public registration. That so favorable a response should have been made to the demands of the Board of Health in this respect, offers an encouraging prospect for its future endeavors. The habit of making returns, and the recognition of their permanent and increasing value, are necessary in order to bring the record to its highest perfection. No penalties have hitherto been enforced on account of non-compliance with the law, and the resources of this office have not been equal to any extraordinary effort in the collection of statistical information that has not been voluntarily furnished. The comparative incompleteness of our marriage-record is mainly due to this latter cause.

To this Bureau belongs rather the consideration of local circumstances and peculiarities of the district, than generalizations, which would be more firmly based upon the records of the central Bureau, and which, in your report for the Metropolitan District, must embrace whatever of sanitary importance is afforded by this portion of the same.

The number of deaths registered during the past year, is 9,214 for the Long Island portion of the Metropolitan District,* of which 8,589 occurred within the city of Brooklyn and her public institutions. There is no reason to believe that a single death within the latter limits has escaped registration, but prior to the organization of the Board of Health, the record is not so trustworthy. For this reason, comparison can be instituted only between periods subsequent to this event.

For the six months ending September 30, 1866, 5,293 deaths were returned for the city and her public institutions; for the corresponding period of 1867, 4,656 were registered; there is, therefore, a diminution of 637 deaths in favor of the latter. Of the former number, 2,328 were due to foul-air diseases; of the latter, 1,758; a difference of 570 deaths, due to the comparative freedom of the latter period from miasmatic influence.

During the summer of 1866 there were two periods of excessive mortality, one corresponding to the heated term which culminated in the third week of July, the other during the prevalence of Asiatic cholera, which reached its height in the second week of August. The past summer presents a most satisfactory contrast to the foregoing. From the second week of July to the last week of August (both included), there was for the past year a saving of 476 lives in the city alone. The summer has been moderate in temperature, and no epidemic of any magnitude has prevailed. The rural districts, however, and the low grounds on the outskirts of the city, show the influence of the abundant rains of the season in an unusual amount of malarial disease and the greater number of deaths from remittent fever.

COMPARATIVE HEALTHFULNESS OF THE WARDS OF BROOKLYN.

The different wards of the city present very diverse death-rates, as influenced by topographical position, by the prevailing character of their population, its manner of living, its attention to works of sanitary improvement, and obedience to existing sanitary regulations. The following table presents the total number of deaths in each ward during the year, with the rate per thousand of inhabitants.

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* The mortality of the entire city district is represented in the accompanying diagram.

Wards.	Total No. of deaths.	Rate per 1,000.
First Ward	129	21.05
Second Ward	273	31.16
Third Ward	150	16.87
Fourth Ward	265	23.03
Fifth Ward	581	32.60
Sixth Ward	700	26.50
Seventh Ward	382	23.92
Eighth Ward	334	33.98
Ninth Ward	775	33.05
Tenth Ward	714	24.90
Eleventh Ward	570	31.24
Twelfth Ward	457	34.92
Thirteenth Ward	387	21.75
Fourteenth Ward	500	32.41
Fifteenth Ward	298	26.02
Sixteenth Ward	768	31.50
Seventeenth Ward	286	28.00
Eighteenth Ward	163	26.92
Nineteenth Ward	224	27.80
Twentieth Ward	280	20.03
Total	8,236	Average 27.81

The wards in which the death-rate is over thirty per thousand, are the Second, Fifth, Eighth, Ninth, Twelfth, Fourteenth and Sixteenth. The high rate in the Eleventh Ward is due to the location of the Brooklyn City Hospital within its boundaries. The number of deaths in that institution for the year, was seventy-four, and the rate for the ward, when these are excluded from the reckoning, 27.19 per thousand. These wards are the same, with the exception of the Ninth, which presented last year the highest death-rates, showing that the deadly influences at work in them were not temporary, but possess a degree of permanence in spite of endeavors to counteract them. In the Ninth Ward two unusual sources of disease existed during the past summer. Abundant rains rendered noxious its unoccupied marshy soil, and pools of stagnant water and the upturning of the soil and accumulation of organic matter in the course of the labors upon Prospect Park, have added their influence to that of the former, in raising the death-rate from the average of the previous year, to five per thousand above that of the present.

The causes of the high death-rate in our city may be brought into prominence by comparing the four most favored wards, the Third, Twentieth, First and Thirteenth, with the four at the other extreme of the scale, viz : the Twelfth, Eighth, Fifth and Fourteenth. The Third and Twentieth Wards occupy the choicest sites within the city limits, are remote from the river, elevated, well drained, and occupied by the finest residences, inhabited by a highly-civilized and affluent population. The First has all the advantages of the Third, with the exception of a single street at the foot of "the Heights," adjoining the river. The Thirteenth has also an unwholesome river front, but is fortunate in its large proportion of well-drained soil and well-situated, comfortable residences.

In marked contrast to the foregoing are the amphibious Twelfth and Eighth Wards. The Twelfth consists largely of tongues and belts of land rescued from the tides, the sanitary condition of which is deplorable. It was here that the cholera took up its abode last year, and with ample justification. The Eighth shares the disadvantages of its neighbor. Many of its streets are embankments or causeways amid watery wastes, and the corresponding squares resemble rather the lake dwellings of a far remote antiquity than modern habitations. The Fifth Ward embraces an unhealthy litioral district, of which the point of land between Wallabout Bay and the East River, not embraced in the Navy Yard, is occupied by tenement houses and miserable dwellings, and is a hot-bed of zymotic germs. The Fourteenth Ward, side by side with the favored Thirteenth, differs from it mainly in the character of its dwellings and their inhabitants. While in the Thirteenth less than one-fourth, in the Fourteenth over one-half, of the population is foreign, and its streets are notoriously neglected.

Of the four healthy wards mentioned above but one-fourth of the population is foreign, while in the four unhealthy wards but one-third is native. The death-rate among foreigners is much higher than in our native population. The former suffer from want of acclimation, and from the poverty which has driven them to seek a more tolerable existence on our shores, and here consigns them to districts which their more fortunate native-born fellow-citizens have avoided or forsaken.

The fact ought not to pass unnoticed that the most prominent causes of unhealthfulness in our city are such as time will surely remedy. The rapidly growing city has extended over a surface unprepared for its reception ; works of public improvement are already planned, and awaiting the increased value of property to warrant their consummation.

INFANT MORTALITY.

The following table furnishes the total weekly mortality of adults, in contrast with that of children, from the first week in June to the last week in September, for the entire district:

			Adults.	Children.
For the week ending		June 8th	57	76
“	“	June 15th	44	64
“	“	June 22d	49	77
“	“	June 29th	47	101
“	“	July 6th	60	191
“	“	July 13th	66	169
“	“	July 20th	51	199
“	“	July 27th	70	207
“	“	Aug. 3d	47	229
“	“	Aug. 10th	53	216
“	“	Aug. 17th	64	226
“	“	Aug. 24th	60	214
“	“	Aug. 31st	61	195
“	“	Sept. 7th	77	186
“	“	Sep. 14th	50	144
“	“	Sep. 21st	66	165
“	“	Sep. 28th	73	130
Totals			995	2,789

It is a fact in harmony with the indication of the foregoing table, that in the absence of unusual epidemic influence, adult mortality is not subject to great fluctuation from week to week and season to season, while that of infants swells the tide which sets in so strongly during the month of June, to ebb gradually as the approach of winter destroys the vitality of organic morbid germs.

While many infants perish in spite of robust constitutions, through the ignorant care or neglect of parents, and many inheriting feeble or tainted constitutions are timely cut off in early infancy, another and the largest proportion of valuable lives is annually sacrificed to preventable diseases, lurking and fermenting in unwholesome habitations, in tenement-houses inflicted on the poor by wealthy, but greedy and selfish owners. The poor are compelled to take such abodes as the wealthy provide for them.

Every wealthy owner, therefore, of such a haunt of misery merits the sternest condemnation of all good citizens. The amount of suffering which is inflicted upon this community, and circles in wide-spreading contagion around these centres of morbid attraction, passes calculation. There is no charity so pressing, so worthy to engross the minds of our capitalists, as that of supplying dwellings for the poor, constructed and maintained according to the teachings of sanitary science. The example set by one of our illustrious countrymen in a foreign city will hand down his name to the gratitude of posterity as surely and proudly as the institutions of learning fostered by his beneficence in our own country. Great as this charity is, it would be sure to yield an adequate return on the pecuniary investment. The law ought, then, to forbid to be inhabited every room, or apartment, or enclosure, from which the light of day is shut out, which is not properly ventilated, is not protected against accumulations of filth, or which in any manner promotes or subserves human physical degradation.

SCARLATINA.

There has been no intermission in the prevalence of scarlatina during the past year, every week having furnished its quota of deaths from this cause, the whole number for the year amounting to 369. The disease was most fatal during the week ending July 6th, for which 21 deaths were reported. In the following table is given the total mortality in each ward from scarlatina for the year, with its ratio to the number of children under five years of age, according to the last census:

Wards.	Total No. of Deaths.	No. of Children under 5 years to each death.
First Ward	8	89
Second Ward	12	99
Third Ward	5	146
Fourth Ward	7	166
Fifth Ward	38	65
Sixth Ward	22	163
Seventh Ward	12	168
Eighth Ward	24	61
Ninth Ward	25	136
Tenth Ward	42	90
Eleventh Ward	21	104

Wards.	Total No. of Deaths.	No. of Children under 5 years to each death.
Twelfth Ward	22	95
Thirteenth Ward	14	156
Fourteenth Ward	28	85
Fifteenth Ward	25	66
Sixteenth Ward	20	210
Seventeenth Ward	19	81
Eighteenth Ward	9	100
Nineteenth Ward	7	139
Twentieth Ward	9	172
Totals	369	119

The low rate of mortality in the Sixteenth Ward from scarlatina, when compared with the number of cases reported, and with the high death-rate from all other causes in that undrained, marshy, and crowded ward, is remarkable. The proportion of children under five years of age to the entire population of the ward is nearly one-sixth (the same as in the Twelfth Ward, and double that of the Third); but the Sixteenth Ward is a German settlement, and the nationality may possibly explain the comparative immunity.

The most decided epidemic of scarlatina during the year was that which prevailed in the Fifth Ward from the middle of May until the last of July, and destroyed 24 lives in that quarter of the ward (before alluded to) between the Navy Yard and the River.

CHOLERA AND YELLOW FEVER.

But five fatal cases of cholera were reported during the past summer, and but thirteen of cholera morbus; a degree of immunity so unexpected as to be a special source of gratitude.

While yellow fever scourged the shores of the Gulf, and fears were entertained of an epidemic of that disease in our own city, its actual prevalence was limited to a few cases. Timely warning was given for the exercise of caution. As early as the 10th of July, a fatal case of that disease occurred in Bergen street, in the Tenth Ward. It was that of a storekeeper who had visited on a lighter an infected ship, detained at Quarantine. On the 7th of August an Italian brig, the *Chiara*, entered this port, and after discharging her cargo of oranges, during which operation several of her crew were taken ill, was moored at a dock in Newtown creek, in the Seventeenth Ward, to reload. While there, three more of her crew were seized with sudden illness and were removed to the Kings County Hospital, at Flatbush. Here they were under close observation by yourself and the physicians of that institution. Their disease could not be called yellow fever, as there was no jaundice and no fever, but there was evidence of a serious disorganization of the blood, in bleeding gums, albuminous urine, excessive prostration, with, in one case, anthrax during convalescence. There was no suspicion of a scorbutic taint in these cases.

On the 17th of September, one of the workmen in the glass factory of Messrs. Bailey and Dobleman, in the Seventeenth Ward, was taken ill with symptoms of yellow fever, and died on the seventh day of the disease. Four others were seized soon after, and in like manner. These cases I was commissioned to investigate. The post-mortem appearances in the first case, those in one of the subsequent ones, with the symptoms in a case which recovered, were observed by myself, and carefully analyzed. While I fully recognize the fact that diseases are not entities which, like living beings, may have their generic and specific characters accurately determined by observation, I am confident that these cases presented evidence of the action upon those affected of a specific morbid cause, of a character foreign to those causes in action upon this community at the time, and that the resulting symptoms and post-mortem appearances accorded more closely with those of yellow fever than of any other disease in our nosological catalogues.

By a strange coincidence, in a region populous with workmen, the only cases of this disease occurred among those employed within an enclosure of the four sides of which the *Chiara* had formed one for several weeks before the outbreak. This coincidence, merely fortuitous, as it now appears, may not seem so surprising when our knowledge of the mode of propagation of such morbid emanations as were here indicated, and of the reactions of the human system to their agency shall be better understood.

DIARRHŒAL DISEASES.

The relation which diarrhœal diseases bore to the entire class of zymotics as causes of death, and to the total mortality throughout the year, may be seen in the accompanying diagram, in which the perpendicular parallel lines correspond to successive weekly periods, and the horizontal divisions denote the number of deaths. Of this class the largest portion is reported as cholera infantum, the remainder as diarrhœa, dysentery, and cholera morbus. There were 830 fatal cases of cholera infantum, 230 of diarrhœa, 201 of dysentery, and 17 of cholera morbus, reported during the year for the city and its public institutions, making 1,278 for the entire class of diarrhœal diseases. Of these 1,129 were of infants under five years of age.

CONSUMPTION.

Consumption presents its usual melancholy record of lives cut off in their prime, and of wide spread, remorseless devastation.

1866.		Deaths.
In October, there were		96
In November,	do	115
In December,	do	110
1867.		
In January,	do	106
In February,	do	75
In March,	do	140
In April,	do	102
In May,	do	97
In June,	do	84
In July,	do	97
In August,	do	81
In September,	do	89
Total		1192

1,102 deaths in the district, and 1,072 in the city alone, were due to this cause. The mortality from phthisis in the several wards of the city was as follows :

Wards.	No. of Deaths.	No. of persons to each death.
First Ward	21	244
Second Ward	41	213
Third Ward	17	523
Fourth Ward	40	287
Fifth Ward	88	202
Sixth Ward	102	259
Seventh Ward	41	389
Eighth Ward	41	240

Wards.	No. of Deaths.	No. of persons to each death.
Ninth Ward	90	260
Tenth Ward	106	270
Eleventh Ward	91	200
Twelfth Ward	39	335
Thirteenth Ward	51	349
Fourteenth Ward	67	230
Fifteenth Ward	30	382
Sixteenth Ward	86	283
Seventeenth Ward	35	292
Eighteenth Ward	15	403
Nineteenth Ward	32	251
Twentieth Ward	39	358
Total	1,072	298

The Fifth Ward presents the highest death-rate from this cause also, due to the unhealthfulness of the quarter above indicated; whether from its damp and exposed position, from the character of its population, or from contagion, to which the record of scarlatina has shown it to be peculiarly favorable, and to which recent researches have given prominence in the production of phthisis, a more extended record is necessary in order to determine.

Of the 1,192 deaths within the district, 640 were of males, and 552 of females.

The foreign element in our population suffered more than the native; of the whole number of deaths

549	were natives of the	United States.
459	"	"	Ireland.
144	"	"	Germany.
43	"	"	England.
16	"	"	Scotland.
14	"	"	British America.
5	"	"	France.
3	"	"	Switzerland.
3	"	"	Norway.
3	"	"	Holland.
2	"	"	Spain.
2	"	"	Portugal.
2	"	"	Denmark.

and 7 of other and all different nationalities.

The average duration of residence in the city of those not born here, who died of consumption, was 11.7 years.

The average duration of the disease was a year and a half, or 1.53, more accurately.

From the great number of different occupations reported, no deductions can be drawn respecting the influence of each upon the liability to this disease. A much greater length of record is necessary to this end. The class of Irish laborers is, however, at once pointed out as peculiarly predisposed.

The attention of the sanitary authorities has been directed by the returns of this office to those localities where their interposition has been most needed. The practical object of its institution has thus been subserved. Transcripts of the records have been furnished to all applicants, and have been instrumental in securing their rights in pensions and legacies. The usefulness of the Bureau, in this latter respect, must steadily increase. In addition to these practical results, the pathologist and sanitarian will find in the records of the vital statistics of Brooklyn, as they accumulate and develop their legitimate teachings, a mine of precious truth.

The Bureau of Vital Statistics in this city has served as a rallying-point for the interest of the profession in the advance of medical science and the promotion of the public welfare, and its existence has favorad professional harmony and self-respect. That it should be made subservient to the wants of physicians in the diffusion of valuable information—valuable to them and to the public—and thus make a return for our dependence upon them, which we gratefully recognize, is much to be desired.

Yours, very respectfully,

R. CRESSON STILES,

Deputy Registrar.

Consolidated Abstract of Deaths in Brooklyn, from all causes, registered in the year ending September 30, 1867.

CAUSES OF DEATH.	MALES.																											
	Under 1 year.	1–2	2–	3–	4–	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100	Native.	Foreign.	Total.
CLASS I.—ZYMOTIC.																												
ORDER 1. (MIASMATIC DISEASES.)																												
Small-pox	....	....	...	....	....	1	....	....	1	....	....	....	....	....	...	....	....	....	....	....	..	..	..	..	..	1	1	2
Measles	23	33	15	9	2	8	....	.. .	1	....	....	....	....	....	....	....	....	....	....	....	..	..	..	..	..	87	4	91
Scarlatina	12	41	39	37	17	40	5	1	....	....	....	....	....	....	....	....	....	....	....	....	..	..	..	..	..	181	11	192
Diphtheria	8	14	5	4	2	5	....	....	....	..	....	....	....	....	....	....	....	....	....	....	..	..	..	..	..	38	....	38
Croup	13	13	23	10	7	10	....	....	....	....	....	....	....	....	....	....	....	....	....	....	..	..	..	..	..	71	5	76
Whooping-cough	22	11	9	5	....	2	...	....	....	....	....	....	....	....	.. .	....	....	....	....	....	..	..	..	..	..	48	1	49
Typhus Fever	....	....	....	....	....	2	1	1	1	....	1	....	2	....	....	1	....	1	....	....	..	..	..	..	..	4	6	10
Typhoid Fever	....	....	1	....	....	15	5	6	8	7	6	6	2	8	3	2	4	....	....	1	..	..	..	..	..	42	32	74
Erysipelas	13	2	....	1	1	2	....	2	....	....	1	1	1	....	1	1	....	1	....	....	..	..	..	..	..	22	5	27
Influenza	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	..	..	..	..	..	2	....	2
Dysentery	23	26	6	3	3	6	1	4	1	2	3	2	2	2	7	1	3	2	....	....	..	1	..	..	..	77	21	98
Diarrhœa	59	28	8	1	...	1	....	....	2	1	2	2	1	4	3	4	3	1	3	3	..	..	1	.	..	104	23	127
Cholera Asiatica	....	....	....	....	....	1	....	....	....	1	....	....	2	3	1	....	....	1	....	1	..	..	..	..	..	3	7	10
Cholera Infantum	312	111	12	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	..	..	..	..	..	427	9	436
Cholera Morbus	....	....	....	1	1	....	....	....	....	2	1	....	....	1	1	2	2	....	....	....	..	..	.	..	..	3	8	11
Cerebro-Spinal Meningitis	1	...	2	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	..	..	..	..	..	5	....	5
Intermittent Fever	....	....	....	1	1	....	....	1	....	....	..	....	....	....	1	...	....	....	....	....	..	..	..	..	..	4	....	4
Remittent Fever	1	3	1	2	....	3	7	3	3	6	3	7	1	3	3	1	1	1	3	....	..	..	..	..	..	31	21	52
Other Miasmatic Diseases	....	....	....	....	....	1	....	1	....	....	1	1	1	....	....	....	2	....	....	....	..	..	..	..	..	3	4	7
Total	488	282	121	76	34	98	19	19	17	19	18	19	12	21	20	12	15	7	7	5	..	1	1	..	..	1,153	158	1,311

CAUSES OF DEATH.	FEMALES.																											Total both sexes.	Percentage of each Cause on Total.
	Under 1 year.	1–2	2–	3–	4–	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100	Native.	Foreign.	Total.		
CLASS I.—ZYMOTIC.																														
ORDER 1. (MIASMATIC DISEASES.)																														
Small-pox	....	....	....	...	....	....	....	....	....	....	....	....	....	....	..	..	..	..	..	..	..	..	..	..	..	....	..	....	2	.02
Measles	14	31	12	7	3	6	....	....	1	....	....	....	....	....	..	..	..	..	..	..	..	..	..	..	..	71	3	74	165	1 92
Scarlatina	13	32	39	35	25	47	5	....	1	2	....	....	....	....	..	..	..	..	..	..	..	..	..	..	..	190	9	199	391	4.55
Diphtheria	9	13	16	6	2	12	....	2	3	....	....	....	....	....	..	..	..	..	..	..	..	..	..	..	..	61	2	63	101	1.17
Croup	14	17	20	9	8	8	1	....	....	....	....	....	....	....	..	..	..	..	..	..	..	..	..	..	..	75	2	77	153	1.77
Whooping cough	31	14	11	6	....	1	....	....	....	....	....	....	....	....	..	..	..	..	..	..	..	..	..	..	..	63	....	63	112	1.30
Typhus Fever	....	....	....	....	....	1	....	..	3	2	....	....	2	2	..	..	1	1	..	..	..	..	..	..	..	5	7	12	22	.25
Typhoid Fever	1	....	3	2	2	10	12	14	8	9	4	4	5	4	3	1	2	1	..	..	..	..	..	..	..	54	31	85	159	.85
Erysipelas	6	1	....	....	....	1	....	1	1	....	....	3	....	1	..	..	..	..	1	..	..	..	..	..	..	10	5	15	42	.48
Puerperal Fever	....	....	....	....	....	....	....	....	6	11	9	4	1	2	..	..	..	..	..	..	..	..	..	..	..	8	25	33	33	.38
Influenza	2	....	....	....	....	....	....	....	....	....	....	....	....	....	..	..	..	..	..	..	..	..	..	..	..	2	....	2	4	.04
Dysentery	23	18	10	3	3	9	1	....	2	5	3	4	3	2	1	3	2	3	6	2	..	..	..	..	..	72	31	103	201	2.33
Diarrhœa	53	25	3	....	....	2	...	....	....	....	4	....	1	3	..	..	3	2	1	2	3	..	..	1	..	83	20	103	230	2.67
Cholera Asiatica	....	....	....	....	1	3	1	1	....	....	....	....	2	1	..	..	..	..	..	..	..	..	..	..	..	6	3	9	19	.22
Cholera Infantum	271	111	12	....	....	....	....	....	....	....	....	....	....	....	..	..	..	..	..	..	..	..	..	..	..	382	12	394	830	9.66
Cholera Morbus	1	....	1	....	....	1	....	...	1	....	....	....	....	1	..	..	..	..	1	..	..	..	..	..	..	4	2	6	17	.19
Cerebro-Spinal Meningitis	....	....	....	....	....	2	....	...	....	....	....	....	1	....	..	..	..	..	..	..	..	..	..	..	..	3	....	3	8	.09
Intermittent Fever	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	..	..	..	..	..	..	..	..	..	..	1	1	2	6	.07
Remittent Fever	....	1	5	7	3	4	....	3	1	....	3	....	5	2	1	2	..	1	2	1	..	..	..	..	..	30	11	41	93	1.08
Pyæmia	....	....	....	....	....	....	....	....	1	....	2	....	1	....	..	..	..	..	..	..	..	..	..	..	..	2	2	4	4	.04
Other Miasmatic Diseases	....	1	1	....	....	3	2	....	1	....	....	....	....	....	3	..	..	..	..	..	..	..	..	..	..	5	6	11	18	.20
Total	138	264	133	75	47	110	22	21	29	29	25	15	21	18	10	6	8	8	11	5	3	..	..	1	..	1,127	172	1,299	2,610	30.38

Deaths in Brooklyn—Continued.

CAUSES OF DEATH.	MALES.																										
	Under 1 year.	1–	2–	3–	4–	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100	Native.	Foreign.	Total.
CLASS I.—Continued.																												
ORDER 2. (ENTHETIC OR INOCULATED DISEASES,)																												
Syphilis	5	....	....	....	....	....	....	....	....	2	2	...	1	....	....	....	....	....	....	..	..	..	..	..	..	7	3	10
Malignant Pustule	....	....	....	....	....	....	1	....	....	1	....	....	....	....	....	....	....	....	....	..	..	..	..	..	..	1	1	2
Total	5	....	....	....	....	....	1	....	....	3	2	....	1	....	....	....	....	....	....	..	..	..	..	..	..	8	4	12
ORDER 3. (DIETIC DISEASES.)																												
Purpura	1	....	....	....	1	....	....	1	....	....	....	....	....	....	....	....	....	....	....	..	..	..	..	..	..	2	1	3
Alcholism	....	....	....	....	....	....	....	....	....	3	2	4	1	2	2	3	....	1	....	..	..	..	..	..	..	5	13	18
Other Dietic Diseases	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	..	..	..	..	..	..	1	....	1
Total	2	....	....	....	1	....	....	1	....	3	2	4	1	2	2	3	....	1	....	..	..	..	..	..	..	8	14	22
Total of Zymotic Class	495	282	121	76	35	98	20	20	17	25	22	23	14	23	22	15	15	8	[illegible]	5	....	1	1	....	....	1169	176	1345

CAUSES OF DEATH.	FEMALES.																												Total both Sexes.	Percentage of each Cause on Total.
	Under 1 year	1–	2–	3–	4–	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100.	Native.	Foreign.	Total.		
CLASS I—Continued.																														
ORDER 2. (ENTHETIC AND INOCULATED DISEASES.																														
Syphilis	6	..	..	..	..	..	..	..	1	..	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	8	1	9	19	.22
Malignant Pustule	....	..	..	..	..	..	..	..	..	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	.02
Total	6	..	..	..	..	..	..	..	1	..	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	8	1	9	21	.24
ORDER 3. (DIETIC DISEASES.)																														
Purpura	1	..	..	..	..	..	..	..	..	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	1	4	.04
Alcoholism	....	..	..	..	..	..	..	..	..	..	1	....	....	....	....	....	....	1	....	....	....	....	....	....	....	1	1	2	20	.23
Other Dietic Diseases	....	..	..	1	..	..	..	..	..	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	1	2	.02
Total	1	..	..	1	..	..	..	..	..	..	1	....	....	....	....	....	....	1	....	....	....	....	....	....	....	3	1	4	26	.30
Total of Zymotic Class	445	264	133	76	47	110	22	21	30	29	27	16	21	18	10	6	8	9	11	5	3	....	....	1	....	1138	174	1312	2657	30.92

Deaths in Brooklyn—Continued.

CAUSES OF DEATH.	MALES.																										
	Under 1 year.	1–	2–	3–	4–	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100	Native.	Foreign.	Total.
CLASS II.—CONSTITUTIONAL DISEASES.																												
ORDER I. (DIATHETIC DISEASES.)																												
Gout	....	....	....	....	....	....	....	..	....	....	....	....	....	....	....	....	....	....	....	1	..	..	..	..	..	1	....	1
Rheumatism	....	...	....	....	...	....	....	....	1	....	....	....	....	....	1	....	1	....	....	..	..	..	..	..	..	3	....	3
Dropsy	....	....	2	....	1	1	1	...	1	...	....	1	1	3	1	2	5	1	1	2	1	..	..	..	..	11	13	24
Cancer	....	....	....	1	....	....	...	....	....	....	....	3	1	3	4	6	6	3	4	1	2	1	..	..	..	10	25	35
Noma	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	..	..	..	..	..	..	1	....	1
Other Constitutional Diseases	1	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	1	..	..	..	..	..	2	1	3
Total	2	....	2	1	1	1	1	....	2	....	....	5	2	6	6	8	12	4	5	5	3	1	..	..	..	28	39	67
ORDER 2. (TUBERCULAR DISEASES.)																												
Scrofula	8	1	....	1	....	....	3	....	....	1	1	....	1	....	....	1	....	....	....	..	..	..	..	.	..	17	....	17
Tabes Mesenterica	169	54	17	4	3	3	....	....	....	....	1	....	....	....	....	....	....	1	....	..	..	..	..	..	..	247	5	252
Phthisis	12	15	7	3	3	7	6	34	75	64	83	81	47	59	43	33	18	19	7	..	1	..	1	1	..	259	360	619
Hydrocephalus	65	47	15	9	4	9	....	1	....	....	....	....	....	....	....	....	....	....	....	..	..	..	..	..	..	148	2	150
Other Tubercular Diseases	....	....	....	....	....	1	....	1	....	....	....	....	....	....	....	....	....	....	....	..	..	..	..	..	..	2	....	2
Total	254	117	39	17	10	20	9	36	75	65	85	81	48	59	43	34	18	20	7	..	1	..	1	1	..	673	367	1040
Total of Constitutional Class	256	117	41	18	11	21	10	36	77	65	85	86	50	65	49	42	30	24	12	5	4	1	1	1	....	701	406	1107

CAUSES OF DEATH.	FEMALES.																											Total both Sexes.	Percentage of each Cause on Total.
	Under 1 year.	1–	2–	3–	4–	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100	Native.	Foreign.	Total		
CLASS II—CONSTITUTIONAL DISEASES.																														
ORDER I. (DIATHETIC DISEASES.)																														
Gout	......	....	....	....	....	....	....	....	....	....	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	....	....	1	.01
Rheumatism	.....	....	....	....	....	1	....	....	....	....	....	..	..	..	2	..	..	..	..	2	..	..	..	..	..	4	1	5	8	.09
Dropsy	.....	....	1	1	...	....	...	1	....	...	1	..	..	2	1	3	4	4	5	1	1	..	..	1	..	12	14	26	50	.58
Cancer	.....	....	....	....	....	....	....	1	1	4	2	8	12	24	8	11	9	2	3	3	1	1	..	..	..	40	50	90	125	1.45
Noma	1	....	....	....	....	....	....	....	....	....	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	....	1	2	.02
Other Constitutional Diseases	1	....	....	....	....	....	1	....	....	....	....	..	1	..	..	..	..	..	..	..	..	..	..	..	..	2	1	3	6	.07
Total	2	....	1	1	....	1	1	2	1	4	3	8	13	26	11	14	13	6	8	6	2	1	..	1	..	59	66	125	192	2.25
ORDER 2. (TUBERCULAR DISEASES.)																														
Scrofula	8	5	1	....	1	....	1	1	....	....	....	1	..	..	..	..	..	..	..	1	1	..	..	..	..	18	2	20	37	.42
Tabes Mesenterica	139	59	18	5	3	5	....	....	....	....	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	223	8	231	483	5.62
Phthisis	11	10	8	3	....	8	14	44	63	79	76	58	43	35	24	15	13	17	12	7	..	2	..	..	..	254	288	542	1161	13.51
Hydrocephalus	49	29	13	8	3	6	....	....	....	....	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	108	....	108	258	2.99
Other Tubercular diseases	......	1	1	1	....	1	2	1	1	....	....	1	..	..	..	..	..	..	..	..	..	..	..	..	..	9	....	9	11	.12
Total	207	104	41	17	7	20	17	46	64	79	77	60	43	35	24	15	13	18	12	8	1	2	..	..		612	298	910	1950	22.70
Total of Constitutionl Class	209	104	42	18	7	21	18	48	65	83	80	68	56	61	35	29	26	24	20	14	3	3	.....	1	.....	671	364	1035	2142	24.93

Deaths in Brooklyn—Continued.

CAUSES OF DEATH.	MALES.																											
	Under 1 year.	1-	2-	3-	4-	5-	10-	15-	20-	25-	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-	80-	85-	90-	95-	100	Native.	Foreign.	Total.
CLASS III.—LOCAL.																												
ORDER 1. (NERVOUS SYSTEM.)																												
Meningitis ✓	16	12	7	5	1	8	1	3	3	....	....	2	2	1	....	....	1	....	....	....	....	....	..	..	..	52	10	62
Encephalitis ✓ ✓	2	3	3	4	1	2	1	....	....	....	....	....	....	....	....	....	1	....	....	....	...	....	..	..	..	16	1	17
Softening of the Brain ✓	....	....	1	....	....	....	....	....	1	....	....	2	2	4	3	....	1	....	2	2	...	....	..	..	..	10	8	18
Apoplexy ✓ ✓	....	...	....	....	....	....	...	....	3	2	1	5	5	8	6	7	6	5	3	2	1	2	..	..	..	25	31	56
Paralysis ✓	1	....	1	....	....	....	....	....	1	....	1	3	2	2	...	3	2	4	2	2	....	....	..	..	.	9	15	24
Insanity ✓	....	....	....	....	....	....	....	....	....	....	1	....	....	1	....	....	....	1	....	....	....	....	..	..	..	1	2	3
Epilepsy ✓ ✓	1	1	....	....	....	....	1	2	1	1	2	1	....	....	....	....	....	1	....	....	1	....	..	..	..	6	6	12
Convulsions ✓	185	28	11	5	5	3	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	..	..	..	236	2	238
Tetanus ✓	7	....	....	....	...	3	....	....	1	...	....	....	....	....	.. .	1	....	....	....	....	....	....	..	..	..	10	2	12
Congestion of Brain ✓	33	12	6	4	2	6	3	3	....	5	5	7	2	4	3	3	3	2	....	3	...	....	..	..	..	80	26	106
Other Diseases of Nervous System ✓	1	....	....	....	....	1	....	....	....	....	1	....	....	....	1	....	....	....	....	....	....	....	..	..	..	3	1	4
Total	246	56	29	18	9	23	7	8	10	8	11	20	13	20	13	14	14	13	7	9	2	2	..	..	..	448	104	552
ORDER 2. (CIRCULATORY SYSTEM.)																												
Pericarditis ✓	....	....	1	1	....	....	1	2	2	....	....	2	....	2	....	1	....	1	1	1	1	....	..	..	..	10	6	16
Aneurism 9.0 ✓	....	....	....	....	....	....	....	....	....	....	1	1	3	3	....	....	....	...	....	....	....	....	..	..	..	3	5	8
Heart Disease 9.0 ✓	....	....	....	....	....	3	2	1	5	3	5	4	7	4	3	5	5	9	2	3	....	1	..	..	..	32	30	62
Valvular Disease 9.0 ✓	....	....	....	....	....	1	2	4	3	1	4	5	4	5	2	2	6	2	3	1	1	....	..	..	..	19	27	46
Hypertrophy 9.0 ✓	....	....	...	....	....	....	2	1	....	....	....	....	....	1	....	1	3	1	....	....	....	....	..	..	..	7	2	9
Fatty Degeneration 9.0 ✓	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	..	..	..	1	. ..	1
Total	....	....	1	1	....	4	7	8	10	4	10	12	14	15	5	9	14	13	7	5	2	1	..	..	..	72	70	142

CAUSES OF DEATH.	FEMALES.																													
	Under 1 year	1-	2-	3-	4-	5-	10-	15-	20-	25-	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-	80-	85-	90-	95-	100-	Native.	Foreign.	Total.	Total both Sexes.	Per cent. of each cause on Total.
CLASS III.—Continued.																														
ORDER 1. (NERVOUS SYSTEM.)																														
Meningitis	15	10	8	5	2	9	2	3	2	1	1	1	1	....	....	1	....	1	...	....	....	...	....	....	....	55	7	62	124	1.44
Encephalitis	....	..	1	1	1	4	1	..	..	..	..	1	....	....	1	....	....	....	....	....	1	....	....	....	....	6	5	11	28	.32
Softening of Brain	....	..	..	..	..	..	..	..	..	1	..	..	2	1	2	1	1	3	1	....	1	....	....	....	....	3	10	13	31	.35
Apoplexy	1	..	..	..	..	..	..	..	..	..	4	5	4	9	10	3	5	17	3	1	1	....	1	....	....	25	39	64	120	1.39
Paralysis	....	..	..	..	..	..	..	..	..	..	1	1	2	3	1	1	4	1	4	3	....	....	....	....	....	9	12	21	5	.51
Insanity	....	..	..	..	..	..	..	1	..	1	..	..	....	1	1	....	....	....	1	....	....	....	....	....	....	3	2	5	8	.09
Epilepsy	....	..	..	..	..	1	1	1	..	3	..	..	....	...	....	....	....	1	1	....	1	....	....	....	....	4	5	9	21	.24
Convulsions	159	36	13	6	3	10	2	1	..	..	..	..	....	...	....	....	....	....	....	....	....	....	....	....	....	225	5	230	468	5.43
Tetanus	9	..	..	..	..	..	..	..	..	..	1	..	....	....	....	....	....	....	....	...	....	....	....	....	....	9	1	10	22	.24
Congestion of the Brain	17	4	3	4	2	5	3	1	5	4	1	5	3	....	3	....	1	3	2	....	....	....	....	....	....	51	15	66	172	2.00
Other Diseases of the Nervous System	....	..	..	..	..	..	1	1	1	..	..	..	1	....	2	....	....	....	....	....	....	....	....	....	....	5	1	6	10	.11
Total	201	50	25	16	8	29	10	8	8	10	8	13	13	14	20	6	11	26	12	4	4	....	1	....	....	395	102	497	1049	
ORDER 2. (CIRCULATORY SYSTEM.)																														
Pericarditis	....	..	..	..	..	1	1	1	..	..	..	..	....	1	....	1	1	....	....	....	....	....	....	....	....	3	3	6	22	.24
Aneurism	....	..	..	..	..	..	..	..	..	..	..	..	...	....	....	1	1	....	1	....	....	....	....	....	....	....	8	3	11	.12
Heart Disease	2	..	..	..	..	2	1	3	4	3	4	7	2	6	4	4	5	4	7	5	..	1	....	....	....	26	38	64	126	1.32
Valvular Disease of Heart	....	..	..	..	..	2	6	2	1	2	4	4	4	3	1	3	1	3	1	3	1	2	....	....	....	21	22	43	89	1.04
Hypertrophy of Heart	....	..	..	..	..	..	..	..	..	..	..	1	2	1	1	....	....	....	1	....	....	....	....	....	....	3	3	6	15	.17
Fatty Degeneration of Heart	....	..	..	..	..	..	..	..	..	..	..	..	....	....	....	....	....	1	....	...	....	....	....	....	....	1	....	1	2	.02
Phlebitis	....	..	..	..	..	..	..	..	..	..	.	2	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	2	2	.02
Total	2	..	..	..	..	5	8	6	5	5	8	14	8	11	6	9	8	8	10	8	1	3	....	....	....	55	70	125	267	3.09

Deaths in Brooklyn—Continued.

CAUSES OF DEATH.	MALES.																										
	Under 1 year.	1–	2–	3–	4–	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100–	Native.	Forn.	Total.
CLASS III—Continued.																												
ORDER 3. (RESPIRATORY SYSTEM.)																												
Laryngitis	5	....	3	....	1	1	....	....	1	....	....	....	1	....	....	....	....	....	..	..	..	..	..	..	..	11	1	12
Bronchitis	58	10	4	3	1	1	1	....	1	....	1	....	1	1	6	3	3	3	2	4	2	..	..	..	..	81	24	105
Pleurisy	1	1	1	....	1	....	....	....	....	1	....	....	2	....	....	1	....	2	1	..	1	..	..	..	..	8	4	12
Hydrothorax	......	....	....	....	....	2	....	....	....	....	....	....	..	1	....	1	....	....	..	..	..	..	..	..	..	3	1	4
Empyema	......	....	....	....	....	....	....	....	....	....	....	....	1	....	1	....	....	....	..	..	..	..	..	..	..	1	1	2
Pneumonia	80	24	26	9	3	12	1	2	6	5	9	13	7	6	8	3	2	5	5	..	..	..	..	..	..	170	56	226
Asthma	......	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	....	2	1	..	..	..	..	..	..	1	4	5
Gangrene of Lungs	......	....	....	....	....	....	....	....	1	....	1	....	....	....	....	....	....	....	..	..	..	..	..	..	..	....	2	2
Congestion of Lungs	43	7	1	1	1	2	....	1	....	1	....	1	2	....	2	1	1	2	1	4	..	..	..	1	..	64	9	7[illegible]
Other Pulmonary Diseases	1	1	1	....	....	...	1	....	....	1	2	5	2	2	....	2	....	....	2	..	..	1	..	..	..	14	6	2[illegible]
Total	188	43	36	13	7	18	3	3	9	8	13	19	16	10	18	12	6	14	12	8	3	1	..	1	..	353	108	461
ORDER 4. (DIGESTIVE SYSTEM.)																												
Gastritis	7	....	2	2	....	1	....	....	....	....	4	....	1	4	2	1	1	2	1	..	..	..	..	..	..	14	14	28
Enteritis	21	6	3	1	....	2	2	1	4	2	....	1	1	1	1	3	....	....	..	1	..	..	..	..	..	40	10	50
Peritonitis	......	....	....	....	....	1	1	1	5	3	....	....	....	3	1	....	3	....	..	..	..	..	..	..	..	11	7	18
Ascites	......	....	....	....	....	....	....	...	1	....	1	....	....	1	....	1	....	....	..	..	..	..	..	..	..	1	3	4
Hernia	1	....	....	....	....	....	....	....	....	....	1	....	....	....	1	....	....	1	..	..	1	..	..	..	..	2	3	5
Ileus	2	....	....	....	....	....	....	....	....	....	....	....	1	....	1	1	....	1	..	..	..	..	..	..	..	3	3	6
Intussusception	......	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	..	..	..	..	..	..	..	....	1	1
Hepatitis	1	....	....	....	....	1	....	1	3	1	....	1	2	2	1	....	....	2	..	..	..	..	..	..	..	5	10	15
Jaundice	4	....	....	....	....	1	....	....	1	....	....	....	....	....	....	....	....	1	..	..	..	..	..	..	..	4	3	7
Liver Disease	1	....	....	....	...	....	1	....	....	2	1	2	1	4	4	3	2	1	..	..	..	..	..	..	..	6	16	22
Other Diseases of Digestive System	3	1	1	....	....	....	1	....	....	1	2	2	....	....	1	....	....	....	..	..	..	..	..	..	..	9	3	12
Total	40	7	6	3	....	6	5	3	14	9	9	6	7	15	12	9	6	8	1	1	1	..	..	..	..	95	73	168

CAUSES OF DEATH.	FEMALES.																												Total both sexes.	Percentage of each Cause on Total.
	Under 1 year.	1–	2–	3–	4–	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100–	Native.	Foreign.	Total.		
CLASS III—Continued.																														
ORDER 3. (RESPIRATORY SYSTEM.)																														
Laryngitis	1	1	2	....	1	2	....	....	....	....	....	....	....	....	....	....	..	..	..	..	..	..	..	..	..	6	1	7	19	.21
Bronchitis	35	9	3	5	....	1	....	1	1	1	2	1	....	3	2	3	3	1	4	2	3	..	..	..	..	64	16	80	185	2.15
Plourisy	1	2	1	....	....	....	....	....	1	....	....	....	....	2	....	....	1	2	1	1	..	..	..	..	..	6	6	12	24	.26
Hydrothorax	....	....	....	....	....	....	....	....	1	....	1	1	....	....	....	....	2	..	..	..	..	1	..	..	..	3	3	6	10	.11
Empyema	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	..	..	..	..	..	..	..	..	..	....	....	....	2	.02
Pneumonia	56	27	7	4	....	9	....	5	3	6	8	8	4	6	3	2	10	12	8	6	5	..	..	..	..	128	61	189	415	4.83
Asthma	....	....	....	....	....	....	....	....	....	....	....	1	....	1	1	2	..	1	1	..	..	..	..	..	..	4	3	7	12	.14
Gangrene of Lungs	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	..	..	..	..	..	..	..	..	..	....	....	....	2	.02
Congestion of Lungs	41	7	8	1	1	2	....	1	1	2	2	1	1	2	2	....	4	4	3	2	..	.	..	..	..	70	15	85	158	1.83
Other Pulmonary Diseases	3	....	1	....	....	1	1	....	....	1	1	1	....	1	2	1	3	1	1	..	..	1	..	..	..	10	9	19	39	.44
Total	137	46	22	10	2	15	1	7	7	10	14	13	5	15	10	8	23	21	18	11	8	2	..	..	..	291	114	405	866	10.07
ORDER 4. (DIGESTIVE DISEASES.)																														
Gastritis	8	2	1	1	....	4	1	....	1	1	1	3	....	1	2	3	3	1	..	..	..	..	..	..	..	22	11	33	61	.70
Enteritis	21	6	2	....	1	2	2	3	....	....	....	....	1	3	....	....	1	2	2	2	..	1	..	..	..	39	10	49	99	1.15
Peritonitis	1	....	....	....	1	....	....	2	2	7	4	4	3	1	2	....	..	..	..	..	..	..	..	..	..	12	15	27	45	.52
Ascites	....	....	....	....	....	....	....	1	1	....	1	1	....	....	....	1	..	1	..	..	1	..	..	..	..	2	5	7	11	.12
Hernia	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	..	..	..	..	..	..	..	..	..	....	1	1	6	.07
Ileus	1	....	1	1	....	....	....	....	....	1	....	1	....	....	....	....	..	1	1	..	..	..	..	..	..	5	2	7	13	.15
Intussusception	....	....	...	....	....	....	....	....	....	....	....	...	....	....	....	....	..	..	..	1	..	..	..	..	..	....	1	1	2	.02
Hepatitis	1	....	....	....	....	....	....	....	....	....	2	1	....	....	3	3	..	1	1	..	..	..	..	..	..	2	10	12	27	.31
Jaundice	3	....	....	1	....	....	....	....	....	....	1	....	....	....	....	....	..	1	1	1	..	..	..	..	..	5	3	8	15	.17
Liver Disease	....	....	....	....	....	....	....	....	1	...	...	1	2	3	2	1	1	1	..	1	..	1	..	..	..	4	10	14	36	.42
Other Digestive Diseases	2	....	....	....	....	....	....	....	....	2	2	1	....	1	....	....	..	..	..	..	..	..	..	..	..	5	3	8	20	.22
Total	37	8	4	3	2	6	3	6	5	11	11	12	6	10	9	8	5	8	5	5	1	2	..	..	..	96	71	167	335	3.90

Deaths in Brooklyn—Continued.

CAUSES OF DEATH.	MALES.																										
	Under 1 year.	1–	2–	3–	4–	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100–	Native.	Foreign.	Total.
CLASS III—Continued.																												
ORDER 5. (URINARY SYSTEM.)																												
Nephritis	...	...	...	...	1	2	...	...	...	...	...	1	1	1	2	2	1	1	...	1	...	...	...	...	...	7	6	13
Nephria	...	...	...	...	1	1	1	2	2	2	7	6	2	11	5	3	2	2	2	3	1	...	...	...	...	24	29	53
Cystitis	...	...	...	...	...	1	...	...	...	1	...	...	...	...	1	...	2	2	2	...	...	...	...	...	...	4	5	9
Diabetes	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Stone in Bladder	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	1
Stricture of Urethra	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	1	1	2
Other Diseases of the Urinary System	1	...	...	...	...	...	2	...	...	1	...	2	1	...	1	1	...	...	3	...	...	...	...	...	...	4	8	12
Total	1	...	...	...	2	4	3	2	2	4	7	10	6	12	9	6	5	6	7	4	1	...	...	...	...	41	50	91
ORDER 7. (LOCOMOTORY SYSTEM.)																												
Arthritis	1	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	2	2	4
Caries	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Total	1	...	...	...	...	...	1	...	2	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	3	2	5
ORDER 8. (INTEGUMENTARY DISEASES.)																												
Phlegmon	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Skin Disease	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Total	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	2
Total of Local Diseases	478	106	72	35	18	55	26	24	47	33	50	67	56	72	57	50	45	55	34	27	9	4	...	1	...	1014	407	1421

CAUSES OF DEATH.	FEMALES.																											Total both Sexes.	Percentage of each Cause on Total.
	Under 1 year.	1–	2–	3–	4–	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100–	Native.	Foreign.	Total.		
CLASS III.—Continued.																														
ORDER 5. (URINARY SYSTEM.)																														
Nephritis	....	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	....	....	....	....	....	....	....	....	1	....	1	14	.16
Nephria	1	..	..	1	..	..	..	3	7	3	7	1	3	3	2	2	1	2	4	2	....	....	....	....	....	16	26	42	95	1.10
Cystitis	....	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	1	....	....	....	....	....	....	....	....	3	....	3	12	.14
Diabetes	....	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..	....	1	....	....	....	....	....	....	....	3	....	3	4	.04
Stone in Bladder	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	....	....	....	....	....	....	....	....	....	....	....	1	.01
Stricture of the Urethra	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	....	....	....	....	....	....	....	....	....	....	...	2	.02
Other Diseases of the Urinary System	1	1	..	..	..	1	..	..	..	..	..	1	..	..	1	..	....	....	....	....	....	....	....	....	....	4	1	5	17	.19
Total	2	2	..	1	..	1	..	4	8	3	7	3	4	3	3	2	2	3	4	2	....	....	....	....	...	27	27	54	145	1.68
ORDER 6. (GENERATIVE SYSTEM.)																														
Ovarian Tumor	....	..	..	..	..	..	..	..	1	..	..	..	1	2	1	1	....	..	....	...	...	..	....	....	....	6	3	9	9	.10
Metritis. 141	....	..	..	..	..	..	..	..	5	5	3	3	..	..	..	1	....	....	....	....	....	....	....	...	....	9	7	16	16	.18
Uterine Tumor	...	.	..	..	..	..	..	..	..	..	2	..	..	1	..	.	....	1	....	....	....	....	....	....	....	1	1	2	2	.02
Total	....	..	..	..	..	..	..	..	6	5	5	3	1	3	1	2	..	1	....	..	....	....	....	....	....	16	11	27	27	.31
ORDER 7. (LOCOMOTORY SYSTEM.)																														
Arthritis. 5	....	..	..	..	..	..	1	..	1	..	1	..	..	..	1	..	....	....	....	....	....	....	....	....	....	2	2	4	8	.09
Caries	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	....	....	....	....	....		....	....	....	....	....	1	.01
Mollities Ossium 155	...	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	....	....	....	....	....	..	...	....	....	1	....	1	1	.01
Total	....	..	..	..	..	..	2	..	1	..	1	..	..	..	1	..	....	....	....	....	....	....	....	....	....	3	2	5	10	.11
ORDER 8. (INTEGUMENTARY SYSTEM.)																														
Phlegmon	....	1	..	..	..	1	..	..	..	..	1	..	..	..	1	..	....	....	....	....	....	....	....	....	....	4	....	4	5	.06
Skin Disease	1	..	..	..	..	..	..	..	.	..	..	..	..	..	..	..	....	....	....	....	....	....	....	....	....	1	....	1	2	.02
Total	1	1	..	..	..	1	..	..	..	..	1	..	..	..	1	..	....	...	....	....	....	....	....	....	....	5	....	5	7	.08
Total of Local Diseases	380	107	51	30	12	57	24	31	40	44	55	58	37	56	51	35	49	67	49	30	14	7	1	....	....	888	397	1285	2706	31.49

Deaths in Brooklyn—Continued.

CAUSES OF DEATH.	MALES.																											
	Under 1 year.	1–	2–	3–	4–	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100–	Native.	Foreign.	Total.
CLASS IV.—DEVELOPMENTAL DISEASES.																												
ORDER 1. (CHILDREN.)																												
Premature Birth	107	....	....	....	..	..	..	..	..	..	..	..	..	..	..	....	....	....	....	....	....	....	....	....	....	107	......	107
Preternatural Birth	4	....	....	....	..	..	..	..	..	..	..	..	..	..	..	....	....	....	....	....	....	....	....	....	....	4	......	4
Cyanosis	17	....	....	....	..	..	..	..	..	..	..	..	..	..	..	....	....	....	....	....	....	....	....	....	....	17	......	17
Other Malformations	34	....	....	....	..	..	..	..	..	..	..	..	..	..	..	....	....	....	....	....	....	....	....	....	....	34	......	34
Teething	21	29	4	....	..	..	..	..	..	..	..	..	..	..	..	....	....	....	....	....	....	....	....	....	....	53	1	54
Total	183	29	4	....	..	..	..	..	..	..	..	..	..	..	..	....	....	....	....	....	....	....	....	....	....	215	1	216
ORDER 3. (OLD AGE)	.....	....	....	....	..	..	..	..	..	..	..	..	..	..	..	....	....	....	7	14	10	5		1	....	15	22	37
ORDER 4. (DEBILITY)	114	.. .	2	1	..	..	..	..	..	..	..	..	..	4	1	1	5	8	2	1	....	1	....	....	....	122	18	140
Total developmental diseases	297	29	6	1	....	....	....	....	....	....	....	....	....	4	1	1	5	8	9	15	10	6	....	1	....	352	41	393

CAUSES OF DEATH.	FEMALES.																											Total both Sexes.	Percentage of each Cause on Total.
	Under 1 year.	1–	2–	3–	4–	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100–	Native.	Foreign.	Total.		
CLASS IV.—CONTINUED DISEASES.																														
ORDER 1. (CHILDREN.)																														
Premature Birth	70	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	....	....	....	....	....	....	....	70	....	70	177	2.06
Preternatural Birth	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	....	....	....	....	....	....	....	2	....	2	6	.07
Cyanosis	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	....	....	....	....	....	....	....	8	....	8	25	.29
Other Malformations	18	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	....	....	....	....	....	....	....	18	....	18	52	.60
Teething	21	16	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	....	....	....	....	....	....	....	38	....	38	92	1.07
Total	119	16	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	....	....	....	....	....	....	....	136	....	136	352	4.09
ORDER 2. (WOMEN)																														
Childbirth	......	..	..	..	..	..	..	..	2	2	3	2	1	..	..	..	..	....	....	....	....	....	....	....	....	1	9	10	10	.11
Convulsions (puerperal)	......	..	..	..	..	..	..	2	12	3	6	1	2	2	..	..	..	....	....	....	....	....	....	....	....	17	11	28	28	.32
Flooding	......	..	..	..	..	..	..	2	..	3	4	5	1	1	1	..	..	....	....	....	....	....	....	....	....	7	10	17	17	.19
Other Diseases of this Order	......	..	..	..	..	..	..	..	1	..	.	1	..	..	..	..	..	....	....	....	....	....	....	....	....	1	1	2	2	.02
Total	......	..	..	..	..	..	..	4	15	8	13	9	4	3	1	..	..	....	....	....	....	....	....	....	....	26	31	57	57	.66
ORDER 3. (OLD AGE)	......	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	20	24	31	15	10	5	1	49	57	106	143	1.66
ORDER 4. (DEBILITY)	93	3	2	..	..	1	..	..	1	2	1	2	..	1	2	..	3	8	6	4	2	1	....	1	....	107	26	133	273	3.17
Total Developmental Diseases	212	19	3	....	....	1	....	4	16	10	14	11	4	4	3	....	3	8	26	28	33	16	10	6	1	318	114	432	825	9.60

Deaths in Brooklyn—Continued.

CAUSES OF DEATH.	MALES.																										
	Under 1 year.	1–	2–	3–	4–	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100–	Native.	Foreign.	Total.
CLASS V.—BY VIOLENCE.																												
ORDER I. (ACCIDENT AND NEGLIGENCE.)																												
Fractures and Contusions	1	2	1	..	1	4	3	4	4	7	5	10	2	12	7	2	1	2	2	2	....	....	1	....	....	21	52	73
Gun-shot Wound	.....	..	..	..	..	..	..	..	2	1	1	..	1	....	....	...	....	....	....	....	....	....	....	....	....	2	3	5
Burns and Scalds	3	3	..	4	2	1	1	1	..	2	1	..	....	....	....	1	....	....	....	....	....	....	....	....	....	13	6	19
Poison	......	..	..	..	..	..	..	..	..	1	1	..	1	....	....	....	..	....	....	....	....	...	....	....	....	1	2	3
Drowning	3	..	..	1	..	3	3	3	2	5	4	7	4	8	1	...	1	....	....	....	....	....	....	....	....	23	22	45
Suffocation	2	..	..	..	..	..	..	..	..	1	3	1	...	...	1	....	....	....	....	....	....	....	....	....	....	3	5	8
Exposure	....	..	..	..	..	..	..	..	.	..	..	1	....	....	1	...	....	....	....	....	...	....	....	....	....	1	1	2
Total	9	5	1	5	3	8	7	8	8	17	15	19	8	20	10	3	2	2	2	2	....	....	1	....	....	64	91	155
ORDER 3. (MURDER)	1	..	..	..	..	..	..	..	..	..	..	1	....	....	...	...	....	....	...	....	. .	....	....	....	..	1	1	2
ORDER 4. (SUICIDE)	.....	..	..	..	..	..	..	..	3	4	2	4	3	2	....	1	....	....	....	....	1	....	....	....	....	9	11	20
ORDER 5. (EXECUTION)	.....	..	..	..	..	..	..	.	1	..	..	1	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	2	2
Sudden death, cause not ascertained	6	..	..	..	..	..	.	..	..	..	..	1	....	....	....	....	....	....	....	....	....	....	....	....	....	7	......	7
Total of Violent Deaths	16	5	1	5	3	8	7	8	12	21	17	26	11	22	10	4	2	2	2	2	1	....	1	....	....	81	105	186
Total Mortality from all causes	1542	539	241	135	67	182	63	88	153	144	174	202	131	186	139	112	97	97	64	54	24	12	3	3	....	3317	1135	4452

CAUSES OF DEATH.	FEMALES.																											Total both sexes.	Percent. of each Cause on Total.
	Under 1 year.	1-	2-	3-	4-	5-	10-	15-	20-	25-	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-	80-	85-	90-	95-	100-	Native.	Foreign.	Total.		
CLASS V.—VIOLENCE.																														
ORDER 1. (ACCIDENT AND NEGLIGENCE.)																														
Fractures and Contusions	1	3	2	....	..	1	..	2	3	...	....	1	....	....	1	1	..	1	....	1	1	..	..	..	1	11	8	19	92	1.07
Gun-shot Wound	......	....	....	....	..	..	..	....	....	....	..	....	....	....	....	..	..	....	....	..	..	..	..	..	.	....	....	..	5	.06
Burns and Scalds	1	3	1	5	1	4	..	3	3	1	1	2	....	1	1	..	..	...	...	..	..	..	..	..	..	19	8	27	46	.52
Poison	... ..	....	....	....	..	...	..	....	....	....	1	....	1	...	....	..	..	....	....	..	..	..	..	..	..	1	1	2	5	.06
Drowning	.....	2	....	....	..	1	..	....	....	1	1	1	....	....	....	..	1	....	....	..	..	..	..	..	..	4	3	7	52	.60
Suffocation	3	1	....	....	..	...	..	....	....	....	....	....	....	....	....	..	..	....	...	..	..	..	..	..	.	4	....	4	12	.14
Exposure	2	....	....	....	..	....	..	....	....	....	....	....	....	....	1	..	..	....	....	..	..	.	..	..	..	2	1	3	5	.06
Total	7	9	3	5	1	6	..	5	6	2	3	4	1	1	3	1	1	1	....	1	1	..	..	..	1	41	21	62	217	2.52
ORDER 3. (MURDER)	.....	...	....	....	..	....	..	....	....	....	....	....	....	...	....	..	..	....	....	..	..	..	..	..	..	....	....	....	2	.02
ORDER 4. (SUICIDE)	.....	....	...	...	..	....	..	....	....	1	2	1	....	1	1	1	..	....	...	..	..	..	..	..	..	3	4	7	27	.31
ORDER 5. (EXECUTION)	.....	....	....	....	..	....	..	....	....	....	...	....	....	....	....	..	..	....	..	..	..	..	..	..	..	....	....	....	2	.02
Sudden Deaths, cause unascert'd	2	....	....	....	..	....	..	....	....	....	....	2	....	....	....	..	..	....	...	..	..	..	..	..	..	4	....	4	11	.12
Total of Violent Deaths	9	9	3	5	1	6	..	5	6	3	5	7	1	2	4	2	1	1	....	1	1	..	..	..	1	48	25	73	259	3.00
Total Mortality from all Causes	1255	503	232	129	67	195	64	109	157	169	181	160	119	141	103	72	87	109	106	78	54	26	11	8	2	3063	1074	4137	....	100
Total of both Sexes	2797	1042	473	264	134	377	127	197	310	313	355	362	250	327	242	181	184	206	170	132	78	38	14	11	2	6380	2209	....	8589	100

Mortality by Weeks in the County of Kings, from October 6, 1866, to October 26, 1867.

WEEKS ENDING.	Deaths by Weeks.	UNDER 20 YEARS OF AGE.								AGES.			
		Under 1 year.	1 to 2.	2 to 3.	3 to 4.	4 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 40.	40 to 60.	60 to 80.	80 and upward.
1866.													
Oct. 6	203	56	39	9	6	2	8	4	5	30	29	12	3
Oct. 13	177	58	19	7	7	1	8	4	4	31	21	13	4
Oct. 20	166	46	27	9	2	1	8	2	5	30	22	12	2
Oct. 27	161	38	29	5	2	3	7	2	5	32	22	12	4
Nov. 3	163	49	15	10	6	....	6	5	2	29	24	14	3
Nov. 10	180	52	20	10	3	3	11	3	3	28	23	23	1
Nov. 17	155	33	16	10	4	2	9	7	3	31	19	19	2
Nov. 24	147	39	13	6	4	2	6	3	4	23	30	13	4
Dec. 1	146	36	12	7	5	5	14	2	2	27	17	17	2
Dec. 8	144	34	11	5	9	1	15	1	7	29	19	11	2
Dec. 15	139	31	10	9	3	1	6	2	12	31	20	12	2
Dec. 22	129	32	9	7	4	2	7	2	2	24	24	11	5
Dec. 29	179	48	18	7	11	4	8	3	6	29	24	15	6
	2,086	552	238	101	66	27	113	40	60	374	294	184	40
1867.													
Jan. 5	164	31	23	10	4	7	8	4	5	22	25	21	4
Jan. 12	152	36	13	7	9	4	7	....	5	23	28	18	2
Jan 19	145	40	14	3	6	1	4	4	3	31	16	18	5
Jan. 26	176	43	12	9	8	....	9	4	2	29	33	23	4
Feb. 2	187	55	16	10	4	6	10	....	7	28	25	20	6
Feb. 9	148	39	12	6	3	3	11	....	1	29	25	15	4
Feb. 16	145	51	5	6	4	1	9	5	2	17	18	23	2
Feb. 23	133	41	13	7	5	2	9	2	6	19	17	9	3
Mar. 2	162	43	16	10	6	5	7	4	5	27	26	11	2
Mar. 9	158	41	13	6	11	1	5	3	5	34	18	18	3
Mar. 16	151	30	15	8	3	1	9	....	3	37	24	17	4
Mar. 23	141	35	14	6	3	3	1	4	6	23	22	21	3
Mar. 30	162	54	21	10	4	1	6	2	3	28	16	12	5
April 6	114	29	11	8	3	4	3	1	7	27	6	14	1
April 13	134	34	13	10	5	4	6	2	3	18	23	13	3
April 20	120	32	14	9	5	....	6	....	8	17	15	11	3
April 27	129	35	7	2	4	4	7	5	2	30	17	14	2
May 4	158	47	17	8	4	4	4	3	1	33	21	13	3
May 11	144	42	12	10	7	3	8	3	4	23	18	9	5
May 18	136	39	11	9	6	2	9	3	3	19	12	22	1
May 25	140	33	19	6	5	....	8	3	7	24	17	15	3
June 1	157	41	21	8	7	1	7	....	2	28	22	17	3
June 8	133	27	21	9	2	6	6	1	4	23	20	12	2
June 15	108	30	10	13	3	....	3	4	2	17	15	9	2
June 22	126	41	6	8	8	4	8	1	1	23	18	18	....
June 29	143	57	17	6	6	4	6	2	3	21	16	8	2
July 6	251	108	32	15	11	3	14	3	5	29	18	12	1
July 13	235	100	41	7	3	6	5	4	3	24	28	13	1
July 20	250	120	43	8	3	8	11	1	6	24	17	8	1
July 27	277	132	35	8	8	3	12	4	4	33	25	8	5
Aug. 3	276	146	44	14	5	3	6	4	5	22	11	15	1
Aug. 10	269	132	54	10	5	2	9	1	3	29	14	9	1
Aug. 17	290	141	49	13	3	3	9	3	4	22	28	12	3
Aug. 24	274	111	62	12	8	3	10	2	7	31	14	12	2
Aug. 31	256	109	54	12	3	2	9	3	3	25	22	11	3
Sept. 7	263	104	56	12	3	2	5	4	....	35	18	18	6
Sept. 14	194	73	42	7	3	2	8	5	4	23	15	9	3
Sept. 21	231	82	42	15	7	2	12	1	4	28	26	11	1
Sept. 28	203	57	41	6	2	4	11	2	9	37	19	13	2
Oct. 5	204	67	28	6	5	2	10	3	4	33	22	17	5
Oct. 12	191	55	37	8	5	7	8	4	5	25	17	19	1
Oct. 19	161	43	23	8	3	2	8	1	2	34	23	14	....
Oct. 26	157	46	18	12	9	1	9	5	2	19	19	13	4
Total	9,840	3,194	1,305	480	287	153	445	150	230	1,497	1,143	799	157

Return of Deaths for the three months ending December 31, 1866, *for the City of Brooklyn.*

MONTHS.	Males.	Females.	Not stated.	Total.	United States.	Foreign.	Not stated.	Total.
October	347	374	....	721	514	207	....	721
November	338	304	....	642	457	185	....	642
December	320	323	....	643	422	221	....	643
Total	1,005	1,001	....	2,006	1,393	613	....	2,006

MONTHS.	Under 1 year.	1–2.	2–3.	3–4.	4–5.	5–10.	10–15.	15–20.	20–25.	25–30.	30–35.	35–40.	40–45.	45–50.	50–55.	55–60.	60–65.	65–70.	70–75.	75–80.	80–85.	85–90.	90–95.	95–100.	Total.
October	197	83	51	23	11	32	15	15	29	38	20	46	21	34	22	17	16	18	14	7	5	4	1	2	721
November	170	36	46	25	12	39	14	13	25	23	32	28	29	39	21	17	21	23	15	13	3	5	1	2	642
December	148	41	38	28	14	45	10	29	34	27	41	26	28	23	27	20	15	15	13	8	9	3	2	2	643
Total	515	160	135	76	37	115	39	57	88	88	93	100	78	96	70	54	52	56	42	28	17	12	4	6	2,006

Return of Deaths for the Three Months Ending March 31, 1867, for the City of Brooklyn.

MONTHS.	Males.	Females.	Not Stated.	Total.	United States.	Foreign.	Not Stated.	Total.
January	382	320	....	702	483	219	....	702
February	303	267	....	570	418	152	....	570
March	332	323	....	655	446	209	....	655
Total	1,017	910	....	1,927	1,347	580	....	1,927

MONTHS.	Under 1 year	1–2	2–3	3–4	4–5	5–10	10–15	15–20	20–25	25–30	30–35	35–40	40–45	45–50	50–55	55–60	60–65	65–70	70–75	75–80	80–85	85–90	90–95	95–100	Not Stated.	Total.
January	159	59	44	29	12	33	11	18	19	30	36	34	29	28	25	25	20	23	26	23	12	4	3	....	......	702
February	157	56	33	19	12	36	11	15	18	23	19	28	18	26	17	15	10	20	17	11	4	3	2	....	......	570
March	164	69	35	23	5	23	9	19	27	27	35	44	21	36	21	18	14	18	20	13	9	2	1	1	1	655
Total	480	184	112	71	29	92	31	52	64	80	90	106	68	90	63	58	44	61	63	47	25	9	6	1	1	1,927

Return of deaths for three months ending June 30, 1867, for the city of Brooklyn.

MONTHS.	Males.	Females.	Not stated.	Total.	United States.	Foreign.	Not stated.	Total.
April	270	258	....	528	385	143	....	528
May	305	291	....	596	424	172	....	596
June	285	263	....	548	399	149	....	548
Total	860	812	....	1,672	1,208	464	....	1,672

MONTHS.	Under 1 year.	1–2	2–3	3–4	4–5	5–10	10–15	15–20	20–25	25–30	30–35	35–40	40–45	45–50	50–55	55–60	60–65	65–70	70–75	75–80	80–85	85–90	90–95	95–100	Not stated.	Total.
April	138	45	31	18	10	23	8	19	20	24	26	27	15	20	26	10	19	16	15	8	6	3	....	1	....	528
May	170	67	28	22	9	28	10	15	38	20	22	25	10	32	17	13	17	16	16	8	10	3	....	....	....	596
June	181	53	34	21	14	23	9	8	21	18	27	23	20	23	12	13	10	14	9	9	2	3	....	1	....	548
Total	489	165	93	61	33	74	27	42	79	62	75	75	45	75	55	36	46	46	40	25	18	9	....	2	....	1,672

Return of Deaths for the three months ending September 30, 1867, for the city of Brooklyn.

MONTHS.	Males.	Females.	Not Stated	Total.	United States.	Foreign.	Not Stated.	Total.
July..........................	547	481	....	1,028	862	166	....	1,028
August........................	582	509	....	1,091	888	203	....	1,091
September.....................	443	422	....	865	679	186	....	865
Total	1,572	1,412	....	2,984	2,429	555	....	2,984

MONTHS.	Under 1 year.	1–2	2–3	3–4	4–5	5–10	10–15	15–20	20–25	25–30	30–35	35–40	40–45	45–50	50–55	55–60	60–65	65–70	70–75	75–80	80–85	85–90	90–95	95–100	Over 100	Total.
July	497	147	45	26	19	36	9	20	24	30	26	25	28	28	9	15	11	10	7	9	5	1	1	....	....	1,028
August........................	494	223	52	16	10	28	10	14	24	27	36	20	16	24	26	12	16	16	9	10	4	2	1	1	....	1,091
September.....................	320	165	36	15	6	35	11	14	30	27	34	34	15	24	20	12	14	14	10	13	9	3	2	1	1	865
Total....................	1,311	535	133	57	35	99	30	48	78	84	96	79	59	76	55	39	41	40	26	32	18	6	4	2	1	2,984

DEATHS FROM ZYMOTIC DISEASES.

BROOKLYN.—DEATHS FROM SMALL-POX, MEASLES, SCARLATINA, DIPHTHERIA, WHOOPING-COUGH, TYPHOID FEVER, TYPHUS FEVER, CHOLERA, CHOLERA INFANTUM, DIARRHŒAL MALADIES AND OTHER ZYMOTIC DISEASES.

Registered during the Quarter ending Saturday, December 29, 1866.

WARDS.	Small-Pox.	Measles.	Scarlatina.	Diphtheria.	Croup.	Whooping-cough.	Typhus Fever.	Typhoid Fever.	Cholera.	Cholera Infantum.	Other Diarrhœal Diseases.	Other Zymotic Diseases.	Total Deaths from Zymotic Diseases.	Deaths by Accident or Negligence.	Total Deaths from all Causes.	Total Population (in Wards), Census of 1865.
First	..	....	....	....	....	..	....	....	..	....	1	1	5	2	31	6,128
Second	..	....	2	3	1	..	...	1	3	4	3	....	17	2	72	8,760
Third	..	....	1	....	....	..	....	....	1	...	2	3	7	....	34	8,890
Fourth	..	....	1	.. .	2	..	....	1	..	2	3	5	14	2	59	11,506
Fifth	..	....	5	3	3	..	....	2	..	4	5	2	24	3	132	17,820
Sixth	..	....	5	2	3	1	1	4	..	6	9	4	35	4	157	26,407
Seventh	..	....	3	....	1	1	....	5	..	2	...	5	17	2	91	15,968
Eighth	..	1	6	3	1	1	....	3	..	4	3	1	23	1	75	9,829
Ninth	..	....	2	5	8	..	2	11	..	5	3	7	43	2	161	23,443
Tenth	..	....	4	....	4	..	2	6	..	4	8	5	33	6	162	28,668
Eleventh	..	....	6	1	2	..	....	11	1	4	5	1	31	5	129	18,242
Twelfth	..	....	3	4	1	1	....	1	1	5	4	3	23	2	78	13,085
Thirteenth	..	....	5	1	1	1	....	1	..	4	4	4	21	1	74	17,791
Fourteenth	..	....	7	2	6	2	....	2	..	2	2	3	26	2	118	15,425
Fifteenth	..	....	7	1	2	..	2	5	..	3	3	1	24	1	69	11,449
Sixteenth	..	....	1	3	6	1	2	5	..	3	5	2	28	3	152	21,379
Seventeenth	..	....	9	....	3	..	....	2	1	2	3	2	22	5	87	10,234
Eighteenth	..	1	2	1	2	..	....	1	..	2	4	1	14	....	40	6,053
Nineteenth	..	....	....	2	3	..	....	1	..	3	3	2	14	2	59	8,055
Twentieth	..	....	.. .	4	1	..	....	6	..	6	1	2	20	....	82	13,030
Total Deaths from these Diseases in all the Wards...	..	2	69	35	53	8	9	68	7	65	71	54	441	45	1862	296,112

DEATHS FROM ZYMOTIC DISEASES.

BROOKLYN.—DEATHS FROM SMALL-POX, MEASLES, SCARLATINA, DIPHTHERIA, WHOOPING-COUGH, TYPHOID FEVER, TYPHUS FEVER, CHOLERA, CHOLERA INFANTUM, DIARRHŒAL MALADIES AND OTHER ZYMOTIC DISEASES.

Registered during the Quarter ending March 30, 1867.

WARDS.	Small-Pox.	Measles.	Scarlatina.	Diphtheria.	Croup.	Whooping-cough.	Typhus Fever.	Typhoid Fever.	Cholera.	Cholera Infantum.	Other Diarrhœal Diseases.	Other Zymotic Diseases.	Total Deaths from Zymotic Diseases.	Deaths by Accident or Negligence.	Total Deaths from all Causes.	Total Population (in Wards), Census of 1867.
First	..	....	....	....	2	....	..	....	..	....	....	....	2	....	19	6,128
Second	..	....	2	....	1	....	..	1	..	....	....	1	5	1	63	8,760
Third	..	....	3	....	3	2	..	1	..	1	....	1	11	....	53	8,890
Fourth	..	4	3	2	4	....	..	3	..	....	1	1	18	1	67	11,506
Fifth	..	6	6	1	3	....	..	....	..	....	3	5	24	2	137	17,820
Sixth	..	2	3	1	1	1	..	6	..	....	1	6	21	5	147	26,407
Seventh	..	1	7	2	4	3	..	....	..	....	1	5	23	1	95	15,968
Eighth	..	....	12	2	3	1	..	2	..	....	....	2	22	2	81	9,829
Ninth	..	1	8	2	5	7	..	3	..	....	3	3	32	1	150	23,443
Tenth	..	3	8	2	10	2	..	9	..	1	3	8	46	4	190	28,668
Eleventh	..	5	4	4	3	2	..	1	..	....	3	1	23	8	144	18,242
Twelfth	..	....	3	4	3	4	..	1	..	1	3	7	26	4	94	13,085
Thirteenth	..	1	2	4	3	....	..	1	..	1	2	6	20	1	100	17,791
Fonrteenth	..	....	13	1	2	....	1	1	..	1	....	1	20	1	117	15,425
Fiffeenth	..	....	9	....	1	2	..	3	..	....	....	1	16	1	59	11,449
Sixteenth	..	1	6	2	4	1	..	4	..	....	4	5	27	....	135	24,379
Seventeenth	..	1	9	....	....	1	..	2	..	....	5	1	19	3	65	10,234
Eighteenth	..	....	1	....	2	1	..	1	..	....	....	....	5	....	25	6,053
Nineteenth	..	....	1	....	1	1	1	2	..	....	1	2	9	1	55	8,055
Twentieth	..	5	4	1	2	....	..	....	..	....	....	2	14	....	66	13,980
Total Deaths from these Diseases in all the Wards...	..	30	104	28	57	28	2	41	..	5	30	58	383	36	1862	296,112

DEATHS FROM ZYMOTIC DISEASES.

BROOKLYN.—DEATHS FROM SMALL-POX, MEASLES, SCARLATINA, DIPHTHERIA, WHOOPING-COUGH, TYPHOID FEVER, TYPHUS FEVER, CHOLERA, CHOLERA INFANTUM, DIARRHŒAL MALADIES AND OTHER ZYMOTIC DISEASES.

Registered during the Quarter ending June 29, 1867.

WARDS.	Small-Pox.	Measles.	Scarlatina.	Diphtheria.	Croup.	Whooping-cough.	Typhus Fever.	Typhoid Fever.	Cholera.	Cholera Infantum.	Other Diarrhœal Diseases.	Other Zymotic Diseases.	Total Deaths from Zymotic Diseases.	Deaths by Accident or Negligence.	Total Deaths from all Causes.	Total Population (in Wards), Census of 1865.
First	..	4	3	....	....	....	....	....	..	1	....	....	8	3	32	6,128
Second	..	1	4	1	....	1	....	....	..	....	1	....	8	....	43	8,760
Third..........	..	1	1	....	1	1	....	....	..	...	....	1	5	4	28	8,890
Fourth	..	2	2	1	2	1	....	....	..	....	..	1	9	....	63	11,506
Fifth	..	2	18	1	2	....	....	....	..	....	2	2	27	9	126	17,820
Sixth	..	7	5	2	2	3	....	3	..	2	1	1	26	4	141	26,407
Seventh	..	8	2	1	....	2	....	1	..	2	5	2	23	....	70	15,968
Eighth	..	9	5	3	1	1	....	1	..	....	1	....	21	1	54	9,829
Ninth..........	..	15	12	....	3	...	....	1	.	3	8	2	44	1	131	23,443
Tenth	..	7	13	2	4	....	....	....	..	3	2	1	32	4	127	28,668
Eleventh	..	5	8	....	1	1	1	1	..	1	2	4	24	3	114	18,242
Twelfth	..	1	7	....	2	2	1	....	..	1	....	1	15	10	97	13,085
Thirteenth	..	1	4	....	1	2	1	1	..	1	....	1	12	3	79	17,791
Fourteenth.....	..	2	7	3	4	2	....	....	..	1	5	1	2›	3	93	15,425
Fifteenth	..	....	3	1	4	....	....	1	..	1	2	1	13	2	62	11,449
Sixteenth	..	4	5	....	2	....	2	2	..	4	5	1	25	6	149	24,379
Seventeenth....	..	2	2	....	2	....	....	2	..	....	2	2	12	....	41	10,234
Eighteenth.....	..	....	3	....	1	1	....	....	..	1	....	2	8	5	31	6,053
Nineteenth . ..	..	....	5	1	3	1	....	....	..	1	2	....	13	1	42	8,055
Twentieth	..	5	3	....	....	....	....	....	..	....	...	....	8	....	41	13,980
Tot. Deaths from these Diseases in all the Wards	..	76	112	16	35	18	5	13	..	22	38	23	358	59	1564	296,112

DEATHS FROM ZYMOTIC DISEASES.

BROOKLYN.—DEATHS FROM SMALL-POX, MEASLES, SCARLATINA, DIPHTHERIA, WHOOPING-COUGH, TYPHOID FEVER, TYPHUS FEVER, CHOLERA, CHOLERA INFANTUM, DIARRHŒAL MALADIES AND OTHER ZYMOTIC DISEASES.

Registered during the Quarter ending Saturday, September 28, 1867.

WARDS.	Small-Pox.	Measles.	Scarlatina.	Diphtheria.	Croup.	Whooping-cough.	Typhus Fever.	Typhoid Fever.	Cholera.	Cholera Infantum.	Other Diarrhœal Diseases.	Other Zymotic Diseases.	Total Deaths from Zymotic Diseases.	Deaths by Accident or Negligence.	Total Deaths from all Causes.	Total Population (in Wards), Census of 1865.
First	..	1	5	....	....	1	....	1	....	11	3	2	24	2	47	6,128
Second	..	..	4	2	1	....	....	....	....	30	3	2	42	....	95	8,760
Third	..	..	1	1	....	1	....	1	....	5	1	....	10	1	35	8,890
Fourth	..	..	1	....	....	....	....	....	....	21	5	3	30	....	76	11,506
Fifth	..	..	12	2	1	...	....	1	1	50	7	4	78	3	186	17,820
Sixth	..	9	7	2	2	6	....	3	2	49	24	5	109	4	255	26,407
Seventh	..	1	1	....	1	7	....	2	....	38	13	3	66	...	126	15,968
Eighth	..	1	1	....	....	4	....	2	....	28	8	2	46	....	124	9,829
Ninth	..	11	3	2	....	7	....	6	....	90	51	9	179	1	333	23,443
Tenth	..	2	16	1	3	2	....	1	....	60	22	10	117	3	235	28,668
Eleventh	..	1	6	2	1	1	. ..	3	....	41	13	2	70	3	183	18,242
Twelfth	..	6	9	....	1	4	....	1	1	46	13	1	82	8	188	13,085
Thirteenth.....	..	3	3	....	....	3	1	1	....	33	8	6	58	....	134	17,791
Fourteenth.....	..	1	2	1	1	7	....	....	....	35	15	2	64	3	172	15,425
Fifteenth	..	..	7	1	2	1	....	1	....	23	6	1	42	5	108	11,449
Sixteenth	..	6	8	1	2	7	....	2	...	95	43	6	170	2	332	24,379
Seventeenth ...	.	3	....	....	....	....	....	....	....	21	12	6	42	1	93	10,234
Eighteenth	..	..	3	1	1	2	....	....	....	16	2	4	29	....	67	6,053
Nineteenth	..	..	1	2	2	1	1	....	....	16	6	1	30	1	68	8,055
Twentieth	..	..	3	....	....	1	....	....	....	18	7	3	32	2	91	13,980
Totals......	..	45	93	18	18	55	2	25	4	726	262	70	1320	39	2948	296,112

Report of Marriages for the City of Brooklyn and County of Kings, for the twelve months ending Sept. 30, 1867.

1866 AND 1867. MONTHS.	TOTAL.	COLOR.	NATIVITY.						CONDITION.					
			FOREIGN.		NATIVE.		NOT STATED.		SINGLE.		BEFORE MARRIED.		NOT STATED.	
		White.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
1866.														
October	107	107	40	36	61	64	6	7	81	94	12	11	11	2
November	113	113	49	38	61	72	3	3	84	92	21	9	8	12
December	97	97	41	31	52	61	4	5	72	73	16	15	9	9
Total for quarter ending December	317	317	130	105	174	197	13	15	240	259	49	35	28	23
1867.														
January	73	73	39	32	33	40	1	......	55	57	12	11	6	5
February	89	89	54	44	34	43	1	2	72	78	16	7	1	4
March	101	101	55	52	43	45	3	4	74	77	18	13	9	11
Total for quarter ending March	263	263	148	129	110	128	5	6	201	212	46	31	16	20
April	124	124	47	40	74	82	3	2	100	95	13	14	11	15
May	152	152	81	75	65	73	6	4	123	128	18	12	11	12
June	140	140	65	63	68	70	7	7	106	111	19	16	15	13
Total for quarter ending June	416	416	193	178	207	225	16	13	329	334	50	42	37	40
July	111	111	55	53	54	55	2	3	83	89	18	12	10	10
August	115	115	72	71	41	41	2	3	84	79	13	10	18	18
September	127	127	59	53	66	73	2	1	92	89	19	17	16	21
Total for quarter ending September	353	358	186	177	161	169	6	7	259	265	50	39	41	49
Total for twelve months	1,349	1,349	657	589	652	719	40	41	1,029	1,070	195	147	125	132

Ages of Persons Married.

1866 AND 1867. MONTHS.	Under 20.		20 to 25.		25 to 30.		30 to 35.		35 to 40.		40 to 45.		45 to 50.		50 to 55.		55 to 60.		60 to 65.		Not stated.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
1866.																						
October	......	23	37	49	39	20	14	7	7	4	5	2	1	1	2	1	1	....	1	....	....	....
November	1	29	47	51	34	22	12	8	8	2	5	....	3	....	2	1	1	....	....	....	....	....
December	......	19	29	43	41	21	9	7	9	3	4	1	2	2	1	1	....	....	....	....	1	1
Total for quarter ending Dec.	1	71	113	143	114	63	35	22	24	9	14	3	6	3	5	3	2	....	1	....	1	1
1867.																						
January	3	20	27	32	19	11	11	5	6	4	4	....	1	....	....	....	1	....	1	1	....	....
February	2	24	39	37	21	17	7	3	7	2	5	2	2	1	3	2	2	1	1	....	....	....
March	....	19	33	46	33	19	12	6	10	2	7	3	2	3	1	2	2	....	....	....	1	1
Total for quarter ending March,	5	63	99	115	73	47	30	14	23	8	16	5	5	4	4	4	5	1	2	1	1	1
April	2	23	41	56	37	24	18	10	10	6	7	2	3	....	3	....	1	..	....	....	2	3
May	3	30	54	67	43	29	27	14	6	5	9	2	7	4	1	....	....	....	1	....	1	1
June	1	28	46	62	44	23	15	5	11	8	7	4	4	2	2	....	2	....	1	1	7	7
Total for quarter ending June.	6	81	141	185	124	76	60	29	27	19	23	8	14	6	6	....	3	....	2	1	10	11
July	......	30	42	40	40	20	12	11	8	2	1	4	3	1	2	2	1	...	1	....	1	1
August	3	26	40	43	33	29	21	11	11	4	4	1	2	1	1	....	....	....	....	....	....	...
September	2	38	48	54	45	13	12	10	10	7	3	3	5	2	....	....	1	....	1	....	....	....
Total for quarter ending Sept.	5	94	130	137	118	62	45	32	29	13	8	8	10	4	3	2	2	....	2	....	1	1
Total for twelve months	17	309	483	580	429	248	170	97	103	49	61	24	35	17	18	9	12	1	7	2	13	14

Report of Births in the City of Brooklyn and County of Kings, for the twelve months ending September 30, 1867.

1866 AND 1867. MONTHS.	Total.	COLOR.		SEX.			NATIVITY OF PARENTS.				
		White.	Black.	Male.	Female.	Not stated.	Foreign.	Native.	Foreign Father only.	Foreign Mother only.	Not stated.
1866.											
October	406	399	7	211	195	....	162	169	35	36	4
November	387	379	8	217	170	....	147	157	50	32	1
December	363	357	6	193	170	....	165	132	34	25	7
Total for quarter ending December	1,156	1,135	21	621	535	....	474	458	119	93	12
1867.											
January	455	446	9	235	220	....	200	196	34	24	1
February	369	366	3	199	170	......	155	151	36	27	....
March	410	399	11	229	180	1	176	149	48	32	5
Total for quarter ending March	1,234	1,211	23	663	570	1	531	496	118	83	6
April	373	363	10	176	197	....	140	161	33	25	14
May	364	357	7	196	168	....	149	149	30	28	8
June	395	387	8	214	181	....	189	153	30	14	9
Total for quarter ending June	1,132	1,107	25	586	546	......	478	463	93	67	31
July	440	434	6	228	212	....	186	169	51	22	12
August	452	447	5	232	220	....	200	160	53	34	5
September	464	452	12	227	237	....	206	174	55	22	7
Total for quarter ending September	1,356	1,333	23	687	669	......	592	503	159	78	24
Total for twelve months	4,878	4,780	92	2,557	2,320	1	2,075	1,920	489	321	73

APPENDED STATEMENTS

TO THE

REPORT

OF THE

REGISTRAR OF VITAL STATISTICS.

Appended Statement No. I.

THE VITAL STATISTICS AND THE STATE OF THE PUBLIC HEALTH IN THE FOURTH QUARTER OF THE YEAR ENDING DECEMBER 31, 1867.

Succeeding a season of excessive rainfalls, the autumn opened as the dryest and most healthful quarter of the year. In the four months that preceded October the total rainfall exceeded twenty-seven inches depth of water; and, in the twelve months preceding this quarter, the total rainfall exceeded fifty-seven inches. The surface of the earth, throughout the Metropolitan District, was excessively saturated with water, except where drainage was good. And it was a noticeable fact that those districts of New York and Brooklyn that are suitably sewered, were, during the autumn (until cold weather came on), more healthful than those outlying and suburban districts where drainage is incomplete.

The undrained and ungraded portions of the Twelfth, Nineteenth and Twenty-second Wards in New York were especially the localities that gave the largest death-rate by the zymotic diseases throughout the quarter. In each of those up-town wards there was an unusual prevalence of intermittent and remittent fever; and although this particular exhibition of malaria did not find any record in the death registers, an excessive mortality of infants, *from all causes*, on the registers stands charged to the badly-drained portions of both cities.

The weather continued warm and dry throughout October and the first two weeks of November. The weekly total of deaths steadily decreased in the first seven weeks of the quarter; though in Brooklyn there was far less gain to the chances of life than in New York, chiefly in consequence of the high death-rate in the unsewered and badly-drained districts in the former city. The mean temperature and the average humidity of the atmosphere continued to be favorable to human life until winter began, as the following records show:

WEEK ENDING.	Mean temperature.	Range of temperature.	Average Humidity—Saturation of the air being regarded as 100.	Total number of deaths, 1867	Deaths in Corresponding Period, 1866.
1867.					
October 5th	58	40 to 71	56	469	449
October 12th	50	37 to 70	61	434	428
October 19th	59	46 to 80	56	464	475
October 26th	52	34 to 71	57	386	409
November 2d	52	40 to 60	65	357	389
November 9th	47	32 to 70	61	357	391
November 16th	42	36 to 65	60	353	372
November 23d	36	16 to 54	55	382	397
November 30th	44	16 to 60	66	362	432
December 7th	29	13 to 45	46	386	385
December 14th	18	1 to 35	49	365	433
December 21st	25	15 to 40	59	430	378
December 31st (10 days—to end of year)	35	15 to 50	66	580	671

Upon the following pages we compare the total footings of the mortality records by classes and at the several ages in the corresponding (fourth) quarters of 1866 and 1867:

Condensed Summary, Showing the Total Mortality of both Sexes, at the Different Ages, with Percentages of the same, in in the City of New York, in the Quarter ending December 31, 1866.

RECAPITULATION : TOTALS OF BOTH SEXES, BY CLASSES ; AND PERCENTAGES.

CAUSES OF DEATH.		Under 1 year.	1–	2–	3-	4–	Total under 5 years.	5–	10–	15–	20–	25–	30–	35–	40–
CLASSES.															
Zymotic	Males.	162	101	71	44	26	401	57	17	15	30	31	20	29	19
	Females	172	104	50	40	33	399	51	13	26	.39	37	30	27	24
	Total ..	334	205	121	84	59	803	108	30	41	69	68	50	56	43
Constitutional	Males.	145	58	27	6	5	241	17	9	23	61	61	62	41	50
	Females.	119	49	14	9	4	195	14	13	22	64	64	64	66	51
	Total...	264	107	41	15	9	436	31	22	45	129	125	126	107	101
Local	Males.	314	105	38	33	17	537	36	15	16	39	36	52	70	68
	Females.	328	72	40	15	14	469	23	10	19	36	46	46	47	44
	Total ..	672	177	78	48	31	1,006	59	25	35	75	82	98	117	112
Developmental	Males.	123	9	....	1	....	133	4	....	....	1	....	2	2	5
	Females.	96	4	3	....	....	103	....	....	2	5	7	7	8	1
	Total...	219	13	3	1	....	236	4	....	2	6	7	9	10	6
Violence	Males.	16	4	3	3	2	28	8	5	8	16	17	24	19	11
	Females	6	....	6	2	3	17	12	3	4	3	3	6	6	4
	Total..	22	4	9	5	5	45	20	8	12	19	20	30	25	15
Totals	Males.	790	277	139	87	50	1,313	122	46	62	147	145	160	161	153
	Females.	721	229	113	66	51	1,183	100	39	73	147	157	153	154	121
Total of both sexes		1,511	506	252	153	104	2,526	222	85	135	294	302	313	315	277
Perce'ge on total mortality of sexes in each period of life		26.94	9.02	4.49	2.73	1.85	45.03	3.96	1.51	2.41	5.24	5.38	5.58	5.61	4.94

Condensed summary, 1866—Continued.

CAUSES OF DEATH.		45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100 and upward.	Total both sexes	Perc'ge of each class.
CLASSES.															
Zymotic	Males	23	14	20	10	5	6	2	3	2	....	....	....	707	25 12
	Females.	10	10	11	9	7	5	2	2	....	....	....	....	702	
	Total..	33	24	31	19	12	11	4	5	2	....	....	....	1,409	
Constitutional	Males.	43	36	25	19	18	7	4	....	....	....	....	....	717	25.62
	Females.	37	39	18	13	20	14	13	11	2	....	....	....	720	
	Total..	80	75	43	32	38	21	17	11	2	....	....	....	1,437	
Local	Males.	37	64	38	43	31	30	7	9	2	....	1	....	1,131	37.65
	Females.	25	45	42	33	31	30	17	10	1	2	2	....	981	
	Total..	62	109	80	76	65	60	24	19	3	2	3	....	2,112	
Developmental	Males.	3	....	2	4	5	7	5	10	4	....	....	....	187	7.17
	Females.	2	3	1	4	4	13	19	15	12	2	6	1	215	
	Total..	5	3	3	8	9	20	24	25	16	2	6	1	402	
Violence	Males.	11	11	6	12	3	....	....	1	1	....	....	....	181	4.41
	Females.	1	1	1	4	2	1	....	....	....	....	....	....	68	
	Total..	12	12	7	16	5	1	....	1	1	....	....	....	249	
Total	Males	117	125	91	88	62	50	18	23	9	....	1	....	2,923	
	Females.	75	98	73	63	67	63	51	38	15	4	8	1	2,686	
Total of both sexes		192	223	164	151	129	113	69	61	21	4	9	1	5,609	
Perce'ge on total mortality of sexes in each period of life		3.40	3.98	2.92	2 69	2.30	2.01	1.23	1.09	.43	.07	.16	.02		

Condensed Summary, showing the Total Mortality of both Sexes, at the Different Ages, with Percentages of the same, in the City of New York, in the Quarter ending December 31, 1867.

CAUSES OF DEATH.		Under 1 year.	1–	2–	3–	4–	Total under 5 years.	5–	10–	15–	20–	25–	30–	35–	40–
CLASSES.															
Zymotic	Males	175	79	52	32	25	363	29	11	10	20	24	22	23	19
	Females ..	178	92	52	28	18	368	27	11	13	17	18	14	11	11
	Total....	353	171	104	60	43	731	56	22	23	37	42	36	34	30
Constitutional	Males	94	45	24	8	7	178	11	9	25	71	66	50	46	50
	Females ...	91	71	24	9	7	202	11	12	30	55	64	53	67	45
	Total....	185	116	48	17	14	380	22	21	55	126	130	103	113	95
Local.............	Males	392	106	50	23	20	591	26	32	18	42	40	37	56	55
	Females ...	264	119	48	31	9	471	31	18	26	44	49	47	38	51
	Total....	656	225	98	54	29	1,062	57	50	44	86	89	84	94	106
Developmental....	Males	139	14	....	1	1	155	....	1	....	3	....	....	1	1
	Females ...	108	8	1	....	....	117	1	1	1	12	5	11	10	6
	Total....	247	22	1	1	1	272	1	2	1	15	5	11	11	7

Violence..........	Males.....	21	1	3	3	1	29	6	1	3	18	11	12	17	12
	Females...	14	1	2	5	....	22	4	5	6	2	1	2	3	2
	Total....	35	2	5	8	1	51	10	6	9	20	12	14	20	14
Totals........	Males.....	821	245	129	67	54	1,316	72	54	56	154	141	121	143	137
	Females...	655	291	127	73	34	1,180	74	47	76	130	137	127	129	115
Total both Sexes..........		1,476	536	256	140	88	2,496	146	101	132	284	278	248	272	252
Percentage on total mortality of both Sexes in each period of life....................		27.72	10.07	4.81	2.63	1.65	46.88	2.70	1.90	2.48	5.33	5.22	4.66	5.11	4.73
Line of gain and loss to Life in the fourth quarter of the year 1867, compared with the corresponding quarter in the year 1866................		+35	-30	-4	+13	+16	+30	+76	-16	+3	+10	+24	+65	+43	+25

Condensed Summary, showing the Total Mortality of both Sexes, at the Different Ages, with Percentages of the same, in the City of New York, in the Quarter ending December 31, 1867—Continued.

CAUSES OF DEATH.		45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100 and upward.	Total both Sexes.	Perc'age of each class on total.
CLASSES.															
Zymotic	Males	14	13	9	11	8	2	2	....	....	....	....	....	580	20.81
	Females ...	7	6	1	7	5	5	4	1	1	1	....	....	528	
	Total....	21	19	10	18	13	7	6	1	1	1	....	....	1,108	
Constitutional.....	Males	52	29	25	14	15	10	8	3	....	....	....	....	662	25.43
	Females ...	50	30	20	14	23	6	5	3	2	....	....	....	692	
	Total....	102	59	45	28	38	16	13	6	2	....	....	....	1,354	
Local.............	Males	67	54	38	39	35	20	20	5	4	....	....	....	1,179	41.45
	Females ...	33	32	41	42	35	35	19	8	7	....	1	....	1,028	
	Total....	100	86	79	81	70	55	39	13	11	....	1	....	2,207	
Developmental....	Males	5	2	4	7	1	7	6	7	3	2	1	....	206	8.60
	Females ...	4	....	2	8	7	13	17	22	6	5	2	2	252	
	Total....	9	2	6	15	8	20	23	29	9	7	3	2	458	
Violence.........	Males	13	10	3	3	1	1	....	....	....	....	....	....	140	3.71
	Females ...	1	3	....	1	1	2	1	2	....	....	....	....	58	
	Total....	14	13	3	4	2	3	1	2	....	....	....	....	198	

Totals........ Males	151	108	79	74	60	40	36	15	7	2	1	....	2,767
Females ...	95	71	64	72	71	61	46	36	16	6	3	2	2.558
Total both Sexes..........	246	179	143	146	131	101	82	51	23	8	4	2	5,325
Percentage on total mortality of both Sexes in each period of life	4.62	3.36	2.69	2.74	2.46	1.90	1.54	.96	.43	.15	.08	.04	....
Line of gain and loss to Life in the fourth quarter of the year 1867, compared with the corresponding quarter in the year 1866	-54	+14	+21	+5	-2	+12	-13	+10	+1	-4	+5	-1	+284

In comparing the two statistical summaries, which we now present, the first fact that deserves our attention is this, viz: that in the final line where the quantity of deaths at each age is given, we find that the saving of 284 lives was effected mainly in the five quinquenniads or five-year periods between the ages of twenty and forty-five years. In that most useful portion of human existence, the relative gain was equal to 167 lives. There also was a saving of 76 lives in children between the ages of five and ten years; while in the climacteric age, between fifty and sixty years, there was a gain of sixty-four lives. But infants continued to perish in their cradles at the same rate as in the year 1866. Only thirty fewer infants under five years of age were sent to the grave. Mild and healthful as the last autumn was, and beneficial as have been the improvements in sanitary drainage and cleansing in particular districts, the chief causes that destroy infant life have not yet been effectually reached. In the unventilated, over-crowded, uncleanly, and badly-lighted tenements of the poor, certain inveterate foes of tender infancy yet hold sway, and the worst of them will not relax their lethal activity until means and incentives to domestic health are supplied in the homes of the lower classes of the city population.

ZYMOTIC DISEASES AND THE WARD DISTRIBUTION OF MORTALITY.

The subjoined abstract exhibits the leading facts concerning the zymotic causes of death, and the distribution of the mortality in the several wards. The import of the records here tabulated, will best be seen by comparing this abstract with those of zymotic causes of death in the preceding quarterly periods. The places (wards) and the circumstances in which the greatest gain to life has been achieved, warrants the conclusion that increased purity of the local atmosphere in particular districts is the greatest of all the causes which have operated to diminish the death-rates. This has been especially noticeable in the Sixth Ward, where the most infamous filthiness and a constantly excessive death-rate have together given way to thorough cleansing of the streets and gutters, such as has not before been witnessed in that wretched locality for more than twenty years. At the same time there has been a steady decrease in the mortality from measles, scarlatina, and the other infectious fevers in that ward and throughout the city.

DEATHS FROM ZYMOTIC DISEASES.

NEW YORK.—DEATHS FROM SMALL-POX, MEASLES, SCARLATINA, DIPHTHERIA, WHOOPING-COUGH, TYPHOID FEVER, TYPHUS FEVER, CHOLERA, CHOLERA INFANTUM, DIARRHŒAL MALADIES AND OTHER ZYMOTIC DISEASES.

Registered during the quarter ending Dec. 31, 1867.

WARDS.	Small-pox.	Measles.	Scarlatina.	Diphtheria.	Croup.	Whooping-cough.	Typhus Fever.	Typhoid Fever.	Cholera.	Cholera Infantum.	Cholera Morbus, and other Diarrhœal Diseases.	Other Zymotic Diseases.	Total deaths from Zymotic Diseases.	Deaths by Accident or Negligence (*Coroners' Inquests.*)	Total deaths from all Causes.	Total Population, (in Wards), Census of 1865.	Percentage of Zymotic Deaths on Total Mortality.	Death-Rate per 1,000 Annually of the Population from Zymotic Causes.	Death-Rate per 1,000 Annually of the Population from all Causes.
First	....	1	4	2	4	....	....	1	....	5	4	5	26	10	118	9,852	22.03	10.56	47.91 *a*
Second	....	....	....	....	....	....	....	....	....	....	......	....	.....	1	11	1,194	.00	.00	36.85
Third	....	....	....	1	1	....	....	....	....	....	......	1	3	.....	19	3,367	33.33	3.56	22.57
Fourth	....	....	2	1	2	3	1	2	....	1	2	4	18	10	163	17,352	11.04	4.09	37.58
Fifth	....	....	1	1	2	3	....	9	....	2	4	9	32	20	154	18,205	20.78	7.03	33.84 *b*
Sixth	....	....	2	1	3	1	1	....	...	2	5	12	27	1	159	19,754	16.98	5.47	32.19 *c*
Seventh	....	1	2	2	3	....	2	3	....	5	5	7	30	5	213	36,962	14.09	3.25	23.05
Eighth	....	....	8	3	3	1	2	8	....	3	7	5	40	9	200	30,098	20.00	5.32	26.58
Ninth	....	1	5	3	2	4	1	7	....	4	6	10	43	13	249	38,504	17.27	4.47	25.87 *d*
Tenth	....	3	4	2	4	....	1	1	....	6	6	5	32	3	195	31,537	16.41	4.06	24.73
Eleventh	....	2	11	8	13	3	1	8	....	7	22	18	93	6	351	58,953	26.50	6.31	23.82 *e*
Twelfth	....	7	3	1	7	3	7	21	1	1	48	21	120	10	328	28,259	36.59	16.99	46.40 *f*
Thirteenth	....	1	7	1	3	1	1	2	....	2	7	2	27	7	151	26,388	17.88	4.09	22.89
Fourteenth	....	1	3	1	8	....	....	2	....	3	2	7	27	4	163	23,382	16.56	4.62	27.88 *g*
Fifteenth	....	....	1	3	....	....	....	3	....	1	......	2	10	1	110	25,572	9.09	1.56	17.21
Sixteenth	1	1	7	3	1	3	....	3	....	1	11	7	38	9	250	41,972	15.20	3.62	23.82
Seventeenth	....	6	19	6	9	3	2	7	....	12	12	12	88	11	477	79,563	18.45	4.42	23.98
Eighteenth	....	3	9	6	8	1	4	2	....	6	5	5	49	5	300	47,613	16.33	4.12	25.20

Nineteenth	4	2	5	3	13	7	4	5	....	8	57	83	191	13	646	39,945	29.57	19.13	64.69 *h*
Twentieth	....	4	2	11	14	6	....	4	...	8	21	15	85	7	398	61,884	21.36	5.49	25.72 *i*
Twenty-first	....	10	5	2	8	6	1	5	....	4	8	20	69	45	389	38,669	17.74	7.14	40.24 *k*
Twenty-second	....	7	3	1	12	1	4	3	....	4	21	3	59	6	281	47,361	21.00	4.98	23.73
Totals	5	50	103	63	120	46	32	96	1	85	253	253	1,107	196	5,325	726,386	20.79	6.10	29.32

a Fort Columbus, 1; Fort Wood, 1; Castle Garden Emigrant Depot, 13; total, 15. *b* New York Hospital, 36. *c* City Prison, 6. *d* St. Vincent's Hospital, 28. *e* St. Franciscus' Hospital, 25. *f* Ward's Island, 165; Bloomingdale Lunatic Asylum, 13; Randall's Island, 9; Colored Orphan Asylum, 1; total, 188. *g* Roman Catholic Orphan Asylum, 3. *h* City Lunatic Asylum, 31; Epileptic and Paralytic Hospital, 7; Small-Pox, 4; Charity Hospital, 102; Work-house, 3; Nursery and Child's Hospital, 25; St. Luke's Hospital, 20; Colored Home Hospital, 14; Alms-house, 158; total, 364. *i* Mount Sinai Hospital, 4. *k* Bellevue Hospital, 156. Total in Public Institutions, 825.

Abstract of Deaths in the city of New York in the Quarter ending December 31, 1867, *Sexes, Nativities, Ages and Percentages at each Period.*

PERIODS.	Males.	Females.	Total.	United States.	Foreign.
Four weeks ending October 26th, 1867.	895	858	1,753	1,161	592
Five weeks ending November 30th, 1867	936	875	1,811	1,101	710
Four weeks and three days ending December 31st, 1867	936	825	1,761	936	825
Total.	2,767	2,558	5,325	3,198	2,127

PERIODS.	Under 1 yr. of age.		1-2.		2-3.		3-4.		4-5.		5-10.		10-15.		15-20.		20-25.		25-30.		30-35.		35-40.		40-45.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Four weeks ending Oct. 26th, 1867	296	259	94	119	51	36	18	20	8	9	27	22	16	19	17	25	45	38	53	51	35	42	50	29	31	33
Five weeks ending Nov. 30th, 1867,	254	217	79	95	36	42	17	22	18	12	24	25	18	15	14	27	45	39	49	44	50	45	59	49	58	43
Four weeks ending Dec. 31st, 1867,	271	179	72	77	42	49	32	31	28	13	20	27	21	13	25	24	64	53	39	42	36	40	34	51	48	39
Total	821	665	245	291	129	127	67	73	54	34	71	74	55	47	56	76	154	130	141	137	121	127	143	129	137	115
Percent. by sexes on total mortality	15.42	12.30	4.60	5.46	2.42	2 39	1.26	1.37	1.01	.64	1.33	1.39	1.03	.88	1.05	1.43	2.89	2.44	2.65	2.57	2.27	2.39	2.69	2.42	2.57	2.16
Total of both sexes	1,476		536		256		140		88		145		102		132		284		278		248		272		252	
Percentage of both sexes on total mortality of the quarter	27.72		10.06		4.81		2.63		1.65		2.72		1.91		2.48		5 33		5.22		4.66		5.11		4.73	

PERIODS.	45-50.		50-55.		55-60.		60-65.		65-70.		70-75.		75-80.		80-85.		85-90.		90-95.		95-100.		100 and upward.		Total by sexes.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Four weeks ending Oct. 26th, 1867,	44	17	25	23	21	16	21	25	16	20	12	20	6	18	4	7	4	7	1	3	....	....	....	...	895	858
Five weeks ending Nov. 30th, 1867,	56	38	46	23	34	21	22	27	19	24	16	23	14	11	6	16	2	6	....	2	....	3	....	....	936	875
Four weeks ending Dec. 31st, 1867,	51	40	37	25	24	23	31	20	25	27	12	18	16	17	5	13	1	3	1	1	1	....	....	2	936	825
Total	151	95	108	71	79	60	74	72	60	71	40	61	36	46	15	36	7	16	2	6	1	3	....	2	2,767	2,558
Percent. by sexes on total mortality	2.83	1.78	2.03	1.33	1.49	1.15	1.39	1.35	1.13	1.33	.75	1.15	.68	.86	.28	.68	.13	.30	.04	.11	.02	.06	....	.01	51.96	48.04
Total of both sexes	246		179		143		146		131		101		82		51		23		8		4		2		5,325	
Percentage of both sexes on total mortality of the quarter	4.61		3.36		2.69		2.74		2.46		1.90		1.54		.96		.43		.15		.08		.04			

Brooklyn Death Records.

DEATHS FROM ZYMOTIC DISEASES.

BROOKLYN.—DEATHS FROM SMALL-POX, MEASLES, SCARLATINA, DIPHTHERIA, WHOOPING-COUGH, TYPHOID FEVER, TYPHUS FEVER, CHOLERA, DIARRHŒAL MALADIES AND OTHER ZYMOTIC DISEASES.

Registered during the last quarter of the year ending Saturday, December 31, 1867.

WARDS.	Small-pox.	Measles.	Scarlatina.	Diphtheria.	Croup.	Whooping-cough.	Typhus Fever.	Typhoid Fever.	Cholera.	Cholera Infantum.	Other Diarrhœal Diseases.	Other Zymotic Diseases.	Total Deaths from Zymotic Diseases.	Deaths by Accident or Negligence.	Total Deaths from all Causes.	Total Population (in Wards), Census of 1865.	Percentage of Deaths from Zymotic Diseases on Total Mortality.	Death-rate per 1,000 annually from Zymotic Causes.	Death-rate per 1,000 annually from all Causes.
First	....	1	3	1	1	1	....	....	....	....	1	1	9	....	39	6,128	23.0	5.88	25.45
Second	...	....	3	3	2	2	....	....	....	....	1	....	11	1	50	8,760	22.0	5.02	22.83
Third	....	....	3	....	....	....	....	1	....	....	....	....	4	1	31	8,890	12.9	1.79	17.32
Fourth	....	....	5	4	1	1	....	3	....	1	3	....	18	....	53	11,506	33.9	6.26	18.34
Fifth	....	....	6	1	4	2	....	1	....	1	4	1	20	3	123	17.820	16.3	4.49	27.55
Sixth	....	3	12	3	5	2	1	3	....	3	7	5	44	6	186	26,407	23.7	6.66	28 17
Seventh	....	....	6	....	3	3	....	1	....	2	2	1	18	1	80	15,968	22.5	4.51	20.01
Eighth	....	....	...	....	2	...	1	1	....	6	1	1	12	2	72	9,829	16.6	4.88	29.30
Ninth	....	4	2	2	8	3	....	7	....	5	8	3	42	7	182	23,443	23.0	7.16	31.05
Tenth	....	2	10	5	....	1	....	2	....	1	8	2	31	4	158	28.668	19.6	4.32	22.04
Eleventh	....	....	2	4	2	2	2	4	...	3	1	2	22	5	124	18,242	17.7	4.82	27.19
Twelfth	....	5	5	1	2	2	....	1	....	2	7	4	29	4	115	13,085	25.2	8.15	35.15
Thirteenth	....	4	4	2	8	....	1	1	....	....	3	3	26	....	89	17,791	29.2	5.85	20.01
Fourteenth	....	7	3	6	3	1	1	....	....	1	6	1	29	2	138	15,425	21.0	7.52	35.78
Fifteenth	....	6	8	...	4	.	....	2	....	1	5	5	31	2	86	11,449	36.0	10.83	30.05
Sixteenth	....	21	16	6	9	13	2	2	....	2	10	5	87	5	255	24,379	34 1	14.27	41.83
Seventeenth	....	. .	1	1	4	....	....	1	....	....	3	....	10	..	42	10.234	21.2	3.90	18.37
Eighteenth	...	3	1	1	1	2	1	1	....	....	1	2	13	3	55	6,053	23.6	8.59	36.35
Nineteenth	....	1	2	1	3	....	....	1	....	1	1	3	13	1	54	8,055	24.0	6.45	26.81
Twentieth	....	....	3	1	3	1	....	....	....	1	1	1	11	....	78	13,980	14.1	3.15	22.32
Total deaths from these diseases in all the wards,	....	57	95	42	65	36	9	32	....	30	73	40	480	47	2,015	296,112	23.8	6.48	27.22

Return of Deaths for the three months ending December 31, 1867, *for the City of Brooklyn.*

MONTH.	Males.	Females.	Not stated.	Total.	United States.	Foreign.	Not stated.	Total.
October	331	336	9	676	501	168	7	676
November	345	308	2	655	488	161	6	655
December	369	307	..	676	458	216	2	676
Total	1,045	951	11	2,007	1,447	545	15	2,007

MONTH.	Under 1 year.	1–2	2–3	3–4	4–5	5–10	10–15	15–20	20–25	25–30	30–35	35–40	40–45	45–50	50–55	55–60	60–65	65–70	70–75	75–80	80–85	85–90	90–95	95–100	100–110	Not Stated.	Total.
October	196	94	38	22	17	31	12	18	29	33	23	24	20	19	17	19	12	13	13	17	8	..	..	..	1	..	676
November	179	86	55	29	24	28	8	18	28	20	23	18	17	25	15	15	17	16	6	13	9	5	..	..	..	1	655
December	140	73	44	25	21	36	14	24	32	37	36	29	21	19	21	25	27	22	10	7	4	6	3	..	..	..	676
Total	515	253	137	76	62	95	34	60	89	90	82	71	58	63	53	59	56	51	29	37	21	11	3	..	1	1	2,007

Summary of Causes of Mortality for the Last Quarter of 1867, for the City of Brooklyn.

CAUSES OF DEATH.	Under one year.	1–	2–	3–	4–	Total under 5 years.	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100–	Total.	Per cent. of each cause on Total.
CLASSES.																												
I.—Zymotic..........	93	110	79	45	39	366	49	8	12	16	19	6	9	11	6	7	6	2	4	7	3	1	....	..	..	..	532	· 25.20
II.—Constitutional......	81	65	21	17	1	191	10	2	25	40	45	48	34	22	19	27	18	17	15	8	6	1	1	..	..	..	529	25.06
III.—Local..............	229	70	37	20	19	375	33	18	16	31	22	24	26	22	39	25	35	40	35	17	18	9	2	..	..	..	787	37.28
IV.—Developmental......	122	9	....	....	....	131	....	. ..	1	3	2	3	4	1	....	....	3	2	4	5	13	10	9	2	1	1	195	9.23
V.—Violence...........	5	4	....	....	2	11	5	6	4	4	6	5	7	8	4	4	2	2	....	....	....	....	....	..	..	..	68	3 21
Total................	533	258	140	82	61	1,074	97	34	58	94	94	86	80	64	68	63	64	63	58	37	40	21	12	2	1	1	2111	100.00

MARRIAGES AND BIRTHS.

The subjoined tables exhibit results of these two branches of registration during the quarter. The aggregate of these returns falls below the numbers registered in the preceding quarter. This deficit results from an inattention to the law requiring the return of these records from clergymen and physicians. But this neglect to make returns does not appear to arise so much from unwillingness as from simple neglect; moreover, during the past year, no circulars have been sent out to urge these returns.

The 3,386 returns of persons married in New York, and the 762 in Brooklyn, certainly fall short of the total number who married in these cities during the last quarter of the year. The same may be said of the incompleteness of the returns of births in this quarter. Circulars to physicians and clergymen will again be sent out, and they will *temporarily* stimulate the returns which the law requires; but actual *completeness* in these branches of registration can be reached only by systematic official collection of the records, as is done in Rhode Island, Massachusetts and Great Britain. This duty is so obvious, and the teachings of experience and examples in regard to it are so conclusive, that the Registrar would respectfully state that the conclusions which were embodied in a preceding section of this report* upon the subject here referred to, are sustained by the experience of the last three months of the year. The very unusual success of the *voluntary* system of the Birth and Marriage returns, and the absolutely perfect character of the individual records which are received from physicians and clergymen, warrant the belief that it will be entirely practicable to obtain complete records.

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*See pages 191 and 192 of this report.

Abstract of Marriages in the city of New York, for the quarter ending December 31, 1867.

MONTHS.	Total.	COLOR.		NATIVITY.						CONDITION.							
				Foreign.		Native.		Not stated.		1st Marr'ge.		2d Marr'ge.		3d Marr'ge.		Not stated.	
		White.	Black.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
October	674	668	6	471	433	186	218	17	23	519	524	81	69	2	2	72	79
November	578	568	10	420	380	143	184	15	14	442	460	75	53	7	1	54	64
December	441	431	10	283	253	152	183	6	5	336	353	55	50	6	....	44	38
Total	1,693	1,667	26	1,174	1,066	481	585	38	42	1,297	1,337	211	172	15	3	170	181

Ages of Persons Married.

MONTH.	Under 20		20 to 25.		25 to 30.		30 to 35.		35 to 40.		40 to 45.		45 to 50.		50 to 55.		55 to 60.		60 to 65.		65 and upward.		Not stated.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
October	6	103	164	300	250	153	123	53	59	28	22	18	23	5	11	2	4	....	1	....	1	....	10	12
November	2	82	164	259	203	145	88	46	61	21	30	6	12	5	7	4	5	1	2	....	....	....	4	9
December	5	78	127	184	145	103	81	35	29	16	20	11	12	4	7	....	5	....	3	....	....	....	7	10
Total	13	263	455	743	598	401	292	134	149	65	72	35	47	14	25	6	14	1	6	....	1	....	21	31

Report of Marriages in the city of Brooklyn and county of Kings, for the three months ending December 31, 1867.

MONTH.	Total.	COLOR.		NATIVITY.						CONDITION.					
				Foreign.		Native.		Not stated.		Single.		Married.		Not stated.	
		White.	Black.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Fem.
October	159	157	2	70	58	86	96	3	5	120	118	22	23	17	18
November	134	133	1	54	56	73	74	6	5	106	98	12	15	16	21
December	88	88	....	38	31	48	53	2	4	70	70	11	9	8	9
Total.............	381	378	3	162	145	207	223	11	14	295	236	45	47	41	48

Ages of persons Married.

MONTH.	Under 20.		20 to 25.		25 to 30.		30 to 35.		35 to 40.		40 to 45.		45 to 50.		50 to 55.		55 to 60.		60 to 70.		Not stated.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
October	1	36	64	64	54	36	15	11	14	4	4	2	2	2	2	......	1	......	.....	....	3	3
November.....	3	25	49	57	39	25	19	13	10	4	2	2	2	1	3	1	1	.....	2	....	4	6
December	1	23	38	35	29	17	12	4	4	1	3	1	1	1	1	.....	......	.....	......	....	2	3
Total......	5	84	151	156	122	78	46	28	28	9	9	5	5	4	6	1	2	.....	2	....	9	12

Report of Births in the City of New York for the Quarter ending December 31, 1867.

MONTHS.	Total.	COLOR.			SEX.			NATIVITY OF PARENTS.					NAME OF CHILD.	
		White.	Colored.	Not Stated.	Male.	Female.	Not Stated.	Foreign.	Native.	Foreign Father (only).	Foreign Mother (only).	Not Stated.	Stated.	Not Stated.
October	1,087	1,075	12	....	584	503	....	698	211	78	99	1	740	347
November	974	965	9	....	479	495	....	644	167	87	76	....	640	334
December	782	775	7	....	414	368	....	512	119	82	60	6	493	289
Total	2,843	2,815	28	....	1,477	1,366	....	1,854	497	247	235	7	1,873	970

Report of Births in the City of Brooklyn and County of Kings for the Quarter ending December 31, 1867.

MONTHS.	Total.	COLOR.		SEX.		NATIVITY OF PARENTS.				
		White.	Black.	Male.	Female.	Foreign.	Native.	Foreign Father (only).	Foreign Mother (only).	Not Stated.
October	490	487	3	252	238	192	199	67	31	1
November	413	406	7	209	204	189	144	47	31	2
December	314	310	4	161	153	138	116	39	21	....
Total	1,217	1,203	14	622	595	519	459	153	83	3

COMPARISON OF THE MORTALITY TABLES OF 1867 WITH THOSE OF 1866.

In concluding this review of the records of the last quarter of the year 1867, and with the hope that henceforth there will, at the close of every year, be instituted a searching comparison of each successive year's experience with that of the year which last preceded, we now undertake such a comparison of the vital statistics of New York for the year 1867 with the statistics of the year 1866. For this purpose we consolidate the total records of deaths that occurred in these respective years into the five classes that embrace all the causes, and, in two tabulations, which are comparable with each other at every point, we present these records by ages of the decedents in twenty quinquenniads, from five years of age to one hundred and upward, and with five prefixed columns for the respective first five years of childhood.

In studying the results which are presented in these condensed abstracts of two successive years' results, the reader will best pursue the comparison of the different points as follows :

1. Compare each of the *grand* totals which are found in the perpendicular column, next to the last, at the right hand side of the pages, and note the difference of each of the five classes as well as the difference in the final sum of mortality in the respective years. Next compare the adjacent column by percentages, to show what share each great class of causes of death had in the total quantity, and to find in what class or classes the chief gain to life was made. This first step in the proposed comparison may be epitomised and carried out to result as follows :

	1866.	1867.	Gain to life in 1867.	Death-rate by each class of causes, in 1000 inhabitant, the population being 1,000,000*.	
				1866.	1867.
Total deaths by zymotic diseases..	8,859	6,583	2,276	8.66	6.58
Total deaths by constitutional dis'e	6,109	5,513	596	6.10	5.51
Local diseases (mostly inflammatory or organic)......	9,036	8,547	489	9.03	8.55
Deaths by developmental diseases.	1,877	1,720	157	1.88	1.72
Death by violence......	939	796	143	0.94	0.79
Total deaths by all causes....	26,815	23,159	3,656	26.81	23.15

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* As the total of the population of the city, including all transient residents, is conceded to be fully equal to 1,000,000 inhabitants at the close of the year 1867, we accept this number rather than that which the census of 1865 gave, both because it is a more correct statement of the fact, and is more convenient for such *percentage* estimates.

2. To compare the total numbers that died at any particular period of life, follow the columns of ages, and find the desired points for comparison.

3. To find and compare the amounts of mortality that occurred in either sex or in both sexes at a particular age, and from a particular class of causes, the reader will note in the first left-hand column the arrangement of the lines in the table for the sexes and for the total of the two sexes.

4. The last horizontal line in the last page of these tables shows the points at which gain and loss to life occurred in the year 1867 over 1866.

This scheme of comparison might be carried out to minute details as regards the nearly three hundred differently-named causes of death, but space cannot be allowed for such an extension of these inquiries in the printed report. Referring to the comparisons which we have instituted in the former sections of this annual report, for many particulars which need not be rehearsed in this place, we will conclude this comparison of the two years, by simply reviewing the facts which stand recorded in the last line of the statistics of the abstracts of death in the twenty-five periods of human life, as classified upon two succeeding pages. In this final line, which shows the gain and loss to life in the year just ended, it will be observed that the signs + and — (*plus* and *minus*), indicate the points at which there was either a saving or loss of life.

Gain in the first year of infancy.—This is seen to have been 305. And this saving was mainly by the diminished fatality of diarrhœal and marasmic disorders, and nearly half of the whole amount of it was effected by a single and most instructive improvement in the hygienic care of nurselings in the humane keeping of the Commissioners of Public Charities, viz : the substitution of the *natural aliment*"—breast milk—for the spoon and bottle-feeding of the foundlings and motherless infants that are committed to the city's charity.

Loss to Life in Second Year of Infancy.—There was one chief cause for this loss of infant life in its second year, viz. : measles.

In the year that ended December 31, 1866, only 252 children died by measles, while in the year 1867 there were 459 deaths by that disease; and as nearly one half of all these deaths occurred in infants *between one and two* years of age, the excess of the aggregate mortality *in the second year* of life in the last twelve months, is found in this single cause.

Condensed Summary of the Mortality Records in New York, in the year 1866, by classes of causes, at the different ages, with percentages of the same.

CAUSES OF DEATH		Under one year.	1–	2–	3–	4–	Total under five years.	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–	90–	95–	100 and upwards.	Total both sexes.	Percent. of each cause on total.
CLASSES.																													
Zymotic........	Males....	1,375	660	285	173	130	2,623	251	95	86	181	201	156	176	158	154	125	103	86	73	21	21	13	2	....	1	....	4,526	33.04
	Females..	1,225	620	239	168	127	2,379	250	67	130	224	237	227	176	140	87	99	90	76	60	40	26	18	4	1	1	1	4,333	
	Total...	2,600	1,280	524	341	257	5,002	501	162	216	405	438	383	352	298	241	221	193	162	133	61	47	31	6	1	2	1	8,859	
Constitutional ..	Males....	756	288	106	47	25	1,222	66	40	90	237	242	214	268	195	161	137	114	84	77	37	21	6	3	....	....	....	3,154	22.76
	Females.	596	230	78	35	20	959	65	43	129	249	237	244	212	164	142	115	90	86	75	50	33	20	5	1	1	....	2,950	
	Total ..	1,352	518	184	82	45	2,181	131	83	219	486	479	458	450	359	303	252	204	170	152	87	54	26	8	1	1	....	6,104	
Local..........	Males....	1,480	455	167	106	71	2,279	159	66	78	170	204	251	274	261	234	236	185	176	176	109	49	34	9	2	2	....	4,964	33.70
	Females. .	1,249	377	173	73	58	1,930	144	65	103	175	192	210	189	147	119	161	134	122	130	102	66	32	15	4	2	....	4,071	
	Total...	2,729	832	340	179	129	4,209	303	131	181	345	396	501	463	408	353	397	319	298	306	211	115	66	24	6	4	....	9,036	
Developmental..	Males....	564	40	4	4	1	613	8	4	3	5	4	7	6	12	16	5	5	22	24	46	35	48	26	6	2	1	898	7.00
	Females. .	425	32	10	2	2	471	2	2	16	24	19	34	24	9	8	14	9	28	32	56	76	75	42	18	14	6	979	
	Total ..	989	72	14	6	3	1,084	10	6	19	29	23	41	30	21	24	19	14	50	56	102	111	123	68	24	16	7	1,877	
Violence	Males....	46	15	13	11	4	89	49	25	28	56	72	88	81	68	38	31	20	29	15	4	3	1	2	....	....	....	699	3.50
	Females.	53	5	17	4	5	84	29	11	10	7	11	19	14	15	7	9	5	8	4	4	2	1	....	....	....	....	240	
	Total ..	99	20	30	15	9	173	78	36	38	63	83	107	95	83	45	40	25	37	19	8	5	2	2	....	....	....	939	
Totals	Males	4,221	1,458	575	341	231	6,826	533	230	285	649	723	726	745	694	603	534	427	397	365	217	129	102	42	8	5	1	14,241	
	Females..	3,548	1,264	517	282	212	5,823	490	188	338	679	696	764	645	475	363	398	328	320	301	252	203	146	66	24	18	7	12,574	
Total of both sexes......		7,769	2,722	1,092	623	443	12,619	1,023	418	673	1,328	1,419	1,490	1390	1169	966	932	755	717	666	469	332	248	108	32	23	8	26,815	
Percent. on total mortality, by sexes, at each period of life..................		28.97	10.15	4.07	2.32	1.65	47.17	3.82	1.56	2.51	4.95	5.29	5.56	5.11	4.36	3.60	3 48	2.82	2.67	2.48	1.75	1 24	.92	.40	12	.08	.03		

Condensed Summary of the Mortality Records in New York, in 1867, *by classes of causes, and at the different ages, with percentages of the same.*

CAUSES OF DEATH.		Under one year.	1–	2–	3–	4–	Total under 5 y'rs.	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	05–	70–	75–	80–	85–	90–	95–	100 and upward.	Total both sexes.	Percent. of each class on total.
CLASSES. Zymotic........	Males. ..	1,406	655	233	171	107	2,572	154	38	41	84	91	89	81	54	57	49	41	42	29	20	6	5	3	1	....	....	3,457	28.41
	Females..	1,250	626	272	123	74	2,345	152	33	44	68	72	81	78	46	47	31	29	27	23	20	16	5	7	2	....	....	3,126	
	Total ..	2,656	1,281	505	294	181	4,917	306	71	85	152	163	170	159	100	101	80	70	69	52	40	22	10	10	3	....	....	6,583	
Constitutional ..	Males	574	229	90	37	28	958	61	36	73	213	228	194	229	198	162	124	88	76	63	33	28	7	2	....	....	....	2,773	23.80
	Females..	468	254	75	38	22	857	47	35	115	231	252	218	241	169	149	113	78	81	78	36	21	14	5	....	....	....	2,740	
	Total ..	1,042	483	165	75	50	1,815	108	71	188	444	480	412	470	367	311	237	166	157	141	69	49	21	7	....	....	....	5,513	
Local	Males	1,552	492	190	103	74	2,411	151	88	75	142	160	193	221	204	241	191	101	161	125	88	61	23	11	3	....	....	4,714	36.91
	Females..	1,099	461	171	96	54	1,881	130	69	71	160	186	175	177	144	129	130	111	139	120	106	51	31	16	2	1	....	3,833	
	Total ..	2,651	953	361	199	128	4,292	284	157	146	302	316	368	400	348	370	321	272	300	245	194	115	54	27	5	1	....	8,547	
Developmental...	Males	549	40	......	1	3	593	1	4	2	6	2	3	4	2	6	7	12	15	9	22	28	41	21	6	4	....	788	7.43
	Females. .	467	20	5	1	1	491	2	1	12	29	28	31	33	19	12	1	7	16	27	43	42	67	32	21	7	5	932	
	Total ..	1,016	60	5	2	4	1,087	3	5	14	35	30	37	37	21	18	8	19	31	36	65	70	108	53	27	11	5	1,720	
Violence	Males	57	6	11	8	7	89	39	32	27	61	45	45	96	56	41	21	13	8	13	5	2	1	1	....	....	....	595	3.44
	Females .	42	11	9	9	3	71	13	10	9	9	16	16	18	7	3	9	3	2	6	2	2	2	....	....	....	....	201	
	Total ..	99	17	20	17	10	163	52	42	36	70	61	61	114	63	44	30	16	10	19	7	4	3	1	....	....	.	796	
Totals......	Males	4,138	1,422	524	320	219	6,623	409	198	218	506	526	524	633	514	507	392	315	302	239	168	125	76	38	10	4	....	12,327	
	Females..	3,326	1,372	532	267	151	5,651	314	148	251	497	554	521	547	385	340	284	228	265	254	207	135	120	60	25	8	5	10,832	
Total of both sexes......		7,464	2,794	1,056	587	373	12,274	753	346	469	1,003	1,080	1,018	1,180	899	817	676	543	567	493	375	260	196	98	35	12	5	23,159	
Percent. on total mortality, by sexes, at each period of life..................		32.23	12.06	4.56	2.33	1.61	52.99	3.25	1.49	2.03	4.33	4.66	4.53	5.10	3.88	3.66	2.91	2.34	2.45	2.13	1.62	1.12	.85	42	.15	.05	.02	......	
Comparison of the mortality in the different periods of life, in the years ending Dec. 31st, 1866, and Dec. 31st, 1867, respectively: showing the total GAIN in each period of life		+305	−72	+36	+36	+70	+375	+270	+72	+204	+385	+339	+442	+210	+270	+119	+256	+212	+150	+173	+94	+72	+52	+10	−3	+11	+3	+3656	

Gain in the next following Three Years of Childhood.—In the ages between two and three, and between three and four, and between four and five, the gain was, for the respective periods—36, 36 and 70, or 142 in the aggregate. This was a small gain, and we shall presently see what causes operated to keep up the high death-rates in these three years of childhood.

The Total Gain to Life in the First Five Years of Childhood was 375.—Yet with this amount of life-saving, the total quantity of this child-mortality was something most painful to contemplate, for it is an index of fearful evils that war against life in the masses of the population. The gain, however, was effected against some of the most relentless foes of infant-life. Measles, scarlatina and diphtheria prevailed epidemically during the first half of the year 1867, and in the twelve months these three causes alone killed 1,530 children, while in the previous year only 811 died by these diseases—a difference of 719. It is, therefore, no light result to have gained 375, instead of losing 719 over the total mortality in the first five-year period. The result is plainly equivalent to a gain of 1094 (375 + 719) lives in this first quinquenniad.

The Gains in the Adult Periods of Life.—Following along the final line, beyond the periods of childhood and adolescence, it is seen that in that grand period of human existence which is the most important in all useful lives, namely, the period between the ages of twenty and forty-five years, there was a saving of 1,586 lives, and that this saving was most conspicuously noticeable in that most publicly and socially important of the years of manhood and womanhood,—the decade between the twenty-fifth and thirty-fifth years of age,—when all the great activities and obligations of life are entered upon with ardor and hopefulness, and when every element of security to individual lives has the very highest commercial and public value. And when we consider that in the particular period of life during which the ablest talent and the greatest numbers seek duty and fortune in the metropolis, the greatest gain was made in the general chances of healthy existence in our city, it must plainly appear that the people of the whole commonwealth and of every state and country can claim a share of the practical benefits which result from such gain to life.

In this comparison of the results of two years' experience we discover at what points any great gain or loss to the chances of life has been made. And in every succeeding year these comparisons and reviews must be kept up, and must be extended to the various districts, and to the particular relations which the gain and the loss may be found to sustain to local causes and to sanitary works, or the want of them.

It has been a leading purpose of the Metropolitan Board of Health to make the records and the chief circumstances of fatal disease directly tributary to the one great object of sanitary government, viz., the prevention of needless sickness and mortality; and, if their preventable causes are diligently and skilfully investigated, and promply met by the proper applications of sanitary science, the time will come when the safeguards of hygiene and the blessings of healthy life can be enjoyed by every class of the people. Until that time comes, there must be unremitting search into the causes and local circumstances which are found associated with every gain and every loss to human life in the metropolis.

E. HARRIS.

Appended Statement No. II.

Summary of Meteorological Observations in the Fifteen Months ending December 31, 1867.

The Board of Health is indebted to Jonas P. Loines, M. D., the Resident Physician of the Eastern Dispensary, New York, for daily and weekly records of Meteorological Observations.

Dr. Loines' stations of observation are (*a*) at the Eastern Dispensary, Essex Market, and (*b*) at Harlem.

Prof. O. W. Morris, at the Institution for Deaf-Mutes, Fanwood, One Hundred Seventy-fifth street (North River side of the city), has continued to favor the Board of Health with observations upon the storms, rainfall, and humidity. The value of these observations of meteorological phenomena is enhanced by a weekly comparison of them with those which the Central Park Commission has instituted in the Park; and their practical usefulness is promoted by the judicious selection and increased number of stations and observers. For although these records of atmospheric changes may fail to throw much light upon the causes and phenomena of disease, they do, nevertheless, very essentially aid the medical inquirer in the discovery of those external conditions which are found associated with the propagation and fatal results of particular diseases; and, at the same time, the precise statement and the nice mechanical aids by which meteorological observations are now made, render them trustworthy. Recently a great improvement has been made in the methods of registering the fluctuations of the atmospheric pressure. This is accomplished by means of an automatic register that both traces the curves and registers the degrees of fluctuation in barometrical pressure for the briefest as well as for the longest periods, and with a nicety that indicates variations of even the thousandth of an inch in the barometrical column of mercury, hour by hour. This very ingenious instrument, invented by Prof. Hough, the Superintendent of the Dudley Observatory at Albany, bids fair to render essential aid in giving to such observations a new and practical value for the purposes of sanitary science. Prof. Hough has kindly furnished the Bureau of Vital Statistics such *barographic* records as we have desired.

In a note to us on this subject, a year ago, Prof. Hough remarked that: "*The percentage of mortality*, in certain diseases, I presume, is intimately connected with atmospheric pressure and temperature, and the study of barometrical and thermometrical indications, in connection with the progress of disease, will undoubtedly lead to valuable deductions." This is a practically important view of this subject, and it has chanced to be obsered in our daily study of the several causes of death, that the fluctuations in the amount of mortality by diseases of the heart and great blood-vessels, and by certain congestive diseases, have reached a maximum whenever the degree of atmospheric pressure was most excessive, either in summer or in winter. With the accession of excessively cold weather, the deaths in old age, and in very feeble persons in needy circumstances, greatly increases—some of this mortality might be prevented by previsionary measures of prudence and increased attention of individuals to their own hygiene condition. The physician also might suggest many timely precautions. But for the present we find the daily records of the humidity and temperature of the atmosphere are, from their well-ascertained relations to the localizing causes of zymotic diseases, the most immediately useful of all the meteorological observations. So useful are these simple elements of information concerning the local atmosphere, that every sickly place and every sick-room or hospital-ward should have its local records of the dry and the wet-bulb thermometers. The same may be well claimed for all school-rooms and asylums. Excessive humidity and excessive dryness of the air we breathe, should be avoided.

No attempts have yet been made by the Board to procure systematic observations upon the ozone of the city atmosphere, nor has it been practicable, in the pressure and multiplicity of other duties, to undertake any of the elaborate scientific investigations that need to be made concerning the chemical impurities of the atmosphere in particular places, and in the particularly unhealthy dwellings in the two cities. The very best skill and resources of chemistry and microscopy must be applied in this branch of sanitary science, if we would make it practically useful. But in regard to the varying and excessive humidity of the atmosphere in certain unhealthful and low-lying districts, and, especially, in certain rear tenements, basements, and *cul de sac* courts, it may truly be said that local dampness is one of the essential elements in the natural history of preventable disease and premature mortality which prevail in such places.

The average degree of humidity of the atmosphere the past year was rendered excessive and long-continued in consequence of profuse and almost daily rainfalls, and by the unusually small proportion of days with clear and sunny sky. The three summer months are believed to have been the cloudiest, dampest, and most rainy of any summer in New York, since the year 1798.

THE PLACE OF OBSERVATION AND THE METEOROLOGICAL INSTRUMENTS.

Essex Market Station.—57 Essex street, corner of Grand; latitude 40° 45′ north; longitude 74° 03′, west. The instruments are elevated fifty feet above mean tide-level, and are twenty feet above the level of the street. The building has an exposure to the south, east, and north,—the northern being upon an open street. The instruments are so suspended as to give the degree of temperature and humidity to which the people on the shaded sides of the streets in the vicinity of Essex Market are exposed. The hygrometers are simply Mason's wet-bulbs. And for hygrometic purposes in the coldest weather of winter, four or five per cent. of alcohol is added to the water that moistens the bulbs; these exceptional observations being properly corrected. The hygrometers for these cold-weather observations are suspended in a cold room with windows open. The reduction of the wet and dry-bulb observation for rate of humidity, is made by means of Glaisher's "factors."

The rain-gauge is kept in an open area of a quadrangle or block of high buildings on Ludlow street. The rain-gauge surface is a funnel, having a top area of one hundred square inches; the funnel opens into a receiver that is protected against evaporation by means of a self-closing valve. The barometer is a "marine," having one-third of an inch calibre. The temperature is observed by means of both the mercurial and spirit thermometers.

E. H.

Meteorological Observations, by Weeks, for the Fifteen Months ending December 31, 1867, *condensed from the Daily Observations of* JONAS P. LOINES, *M. D., Physician to the Eastern Dispensary.*

DATE.	Mean Temperature. (Fahrenheit's Scale.)	Greatest range of Temperature in the week.	Average Humidity. (Saturation being 100.)	Total rainfall. (Inches of water.)	Mean Pressure of the Atmosphere.	Remarks concerning the Wind and other Aspects of the Weather.
Week ending— October 6, 1866	58°	38° to 75°	53°	.10	30.10	Mostly clear, with fresh, dry winds, 4 days N. and N. W. Aurora Borealis night of the 4th instant, after two smoky days.
October 13, 1866	60	50 to 72	68	.50	30.00	Variable, warm and damp. Winds fresh, 5 days N. E. and N. Brilliant Aurora Borealis the night of the 13th instant.
October 20, 1866	58	50 to 74	59	.10	30.06	Dry and warm until last of the week. Winds fresh, 4 days N. W. and N. Sky very clear most of the week.
October 27, 1866	54	38 to 72	59	.15	30.00	Variable sky and winds. After, N. W. and W. 3 days. Lunar halo on Monday the 21st instant.
Average for the month	58	44 to 73	60	.85	30.04	*These four weeks were unusually dry, unclouded and healthful.*
November 3, 1866	52	40 to 65	61	4.50	29.99	Wednesday night the mercury fell .51, and heavy rain began. Winds N. E., S. E., to N. W. Rainfall in two hours Tuesday, exceeded 3 inches; and, in the week, 4½ inches.
November 10, 1866	47	30 to 65	59	.00	30.32	Weather exceedingly fine, with fresh westerly winds—very invigorating. Meteors seen in the nights of the 5th and 6th instant.
November 17, 1866	50	40 to 63	61	1.21	29.87	Changeable and colder. Barometric pressure half inch less than previous week. Sixteen meteors were counted on the night of the 13th instant.
November 24, 1866	46	32 to 61	64	.25	29.75	Barometer continued lower than usual (29.75). Winds westerly and variable. Snow fell during the afternoon of the 21st instant.
Average for the month	49	36 to 63	61	5.96	29.98	*These four weeks were fine and healthful. The rainfall was a flood for a single day,—viz.: on the 30th of October. Professor Morris says, "more rain fell on the 29th and 30th, than in same time for 30 years.*

Meteorological Observations—Continued.

DATE.	Mean Temperature (Fahrenheit's scale.)	Greatest range of temperature in the week.	Average Humidity (Saturation being 100.)	Total Rainfall (Inches of water.)	Mean Pressure of the Atmosphere.	Remarks concerning the Winds and other Aspects of the Weather.
Week ending—						
December 1, 1866	44°	24° to 66°	68°	1.03	29.97	Variable and damp, with great range of temperature (24° to 66°). There were five misty days this week.
December 8, 1866	47	30 to 56	64	1.00	29.98	Mostly clear. Winds fresh, and from variable points.
December 15, 1866	27	14 to 50	47	.00	29.99	Constantly clear, and the coldest week since last February.
December 22, 1866	29	0 to 40	64	1.50	30.03	Snowy and cloudy, with occasional high winds—constantly northerly and W.
December 29, 1866	31	17 to 46	69	.90	29.70	Variable sky and winds. Warmer than previous two weeks.
Average for the month ..	36	17 to 51	62	4.43	29.93	*These five weeks had a mean day and night temperature near freezing point* (36°) *with extreme range from zero to 66°*
January 5, 1867..........	25	14 to 40	63	.25	30.02	Variable sky, but steadily and unusually cold, the thermometer ranging from 14° to 40°. Winds N. N. W. and N. E.
January 12, 1867..........	26	18 to 40	60	.00	29.63	Continually cold and windy; clear and dry. Barometric pressure unusually light, 29.41 inches and upward.
January 19, 1867..........	14	3 to 25	58	1.50	29.76	The coldest week in many years. Thermometric range constantly more than 7° below freezing-point.
January 26, 1867..........	28	8 to 38	71	.50	29.68	Variable, with snow, sleet, rain, and fog. Three clear days and much high wind. The third week of unusually light barometric pressure.
Average for the month ..	23	11 to 36	63	2.25	29.97	*The coldest month that has been experienced in many years. This cold period continued for eight weeks, almost without interruption.*

February 2, 1867.........	23	4 to 47	67	2.80	29.91	Cloudy, variable, and mean temperature nearly 20° warmer than mean of January. Rain, with thunder, &c., on Saturday.
February 9, 1867.........	41	30 to 56	75	1.90	29.82	A clear and very cold week, ending with great rain-storm on Saturday (2.7 inches water), with thunder, &c.
February 16, 1867.........	36	16 to 61	72	.71	30.31	Variable, and much warmer. Thermometer stood at 61° Thursday, P. M.; barometer averaged half inch higher than in January.
February 23, 1867.........	36	22 to 55	62	1.50	29.98	Began clear and very dry, but ended stormily.
Average for the month ..	34	18 to 55	62	6.91	30.00	*These four weeks had more disagreeable weather than December and January together, owing to heavy snow-falls, thaws, and winds.*
March 2, 1867.............	39	28 to 35	67	.30	29.96	Alternately rainy, clear, cloudy and foggy. Wind changing to all points.
March 9, 1867.............	32	20 to 43	70	.50	30.10	Variable, cloudy and damp. Air chilly; winds frequently easterly. Freezing and sloppy.
March 16, 1867.............	33	12 to 56	68	2.50	29.98	Began rainy and foggy, but became clear and dry. Friday the 15th was excessively cold and dry. Mean temperature 22°, and humidity 40°.
March 23, 1867.............	30	16 to 40	58	1.27	29.99	Alternately snowing, windy and clear, and heavily cloudy with gales. A rough week.
March 30, 1867.............	38	30 to 66	56	.35	29.80	Began with snow and wind, but became mild, clear and *very dry;* Saturday was the warmest day in four months, and the dryest in a year.
Average for the month ..	34	21 to 52	64	4.92	29.96	*These five weeks averaged unusually cold, and, like the previous weeks of winter were stormy. In nine weeks the melted snow was equal to near 12 inches depth of water.*
April 6, 1867.............	51	40 to 70	45	.05	29.73	Clear, dry, and invigorating. Winds variable, but the westerly predominating.
April 13, 1867.............	53	38 to 72	49	.20	29.88	Mostly clear, dry and warm. Barometer showed only 29.44 inches when rain began P. M., of the 11th inst.
April 20, 1867.............	54	40 to 70	52	1.10	29 95	Variable and foggy in first four days. Wind shifting—westerly and easterly. The air alternately very humid, and with N. W. winds, excessively dry.
April 27, 1867.............	51	38 to 66	52	.56	28.88	Cloudy and changeable. Winds mostly from easterly quarters; the barometer ranging widely.
Average for the month ..	52	39 to 69	49	1.91	29.86	*These four weeks were (upon the average) 4° warmer, and at least 1° damper than in the corresponding month of* 1866.
May 4, 1867.............	47	37 to 64	53	.50	29.99	Variable and cool. Snowed an hour on Friday. Winds northerly all the week: 1° cooler and 5° damper than first week in May last year.
May 11, 1867......	54	41 to 70	63	2.81	29.66	Winds variable—easterly and westerly all the week.
May 18, 1867.............	59	49 to 70	55	.92	29.75	Heavy rain (2¼ inches) on Wednesday; variable and cloudy most of the week.
May 25, 1867.............	57	47 to 71	63	.83	29.79	Light rains, variable; tempest and some rain on Wednesday. Lunar halo—45° diameter—evening of 16th inst.
Average for the month ..	54	43 to 69	59	5.15	29.79	*These four weeks open as a wet and cloudy season. The atmospheric pressure ranges very low.*

Meteorological Observations—Continued.

DATE.	Mean Temperature. (Farenheit's Scale.)	Greatest range of Temperature in the week.	Average Humidity (Saturation being 100).	Total rainfall. (Inches of water.)	Mean Pressure of the Atmosphere.	Remarks concerning the Winds and other Aspects of the Weather.
Week ending—						
June 1, 1867	67°	56° to 84°	59°	1.32	29.74	Showery with sultry periods. Clear and fine, last two days of the week; 8° warmer than in corresponding week of previous year.
June 8, 1867	70	50 to 84	62	1.85	29.90	Sultry but clear most of the week. Winds most southerly and easterly; 6° warmer and less humid than in 1866.
June 15, 1867	66	48 to 84	65	2.14	30.09	Alternately stormy and hazy. More than two inches depth of rain fell June 9th. Week ended very hot and sultry.
June 22, 1867	70	60 to 85	65	5.20	30 12	Great rainfall the 16th inst. More than two inches depth of water fell in less than an hour at Essex Market. Rains continued through Monday, Tuesday and Wednesday.
June 29, 1867	69	56 to 86	74	1.14	29.98	Alternately rainy, cloudy, and sultry. Air steadily very damp; at times almost saturated. Winds mainly easterly.
Average for the month	68	54 to 85	65	11.65	29.97	*In these five weeks the total rainfall exceeded all previous experience in this latitude. Temperature of the month was precisely at the average of twenty-five years; but the degree of humidity was considerably above the average.*
July 6, 1867	77	64 to 93	65	.34	29.88	A hot damp week. Variable, cloudy, sultry. Winds southerly most of the time. A tempest Thursday evening, and a thunder storm on Saturday evening.
July 13, 1867	72	60 to 88	61	1.35	29.97	The temperature averaged 5° lower than last week; but the weather continued variable and sultry. Winds northerly most of the time.
July 20, 1867	68	57 to 80	61	1.27	30.05	Mostly cool and clear, with westerly winds. Variable and rainy the last of the week.
July 27, 1867	75	58 to 91	64	1.17	29.82	Rainy and variable, with southerly winds most of the week. Last six days very damp and sultry.
Average for the month	73	60 to 88	63	4.13	29.93	*These four weeks mostly damp and cloudy. The temperature averaged about .1° lower than in the past twenty-five years, attributable to unusual cloudiness and excessive saturation of the ground.*

August 3, 1867..........	73°	55° to 90°	70°	2.82	29.94	Rainy and sultry. Humidity of the air constantly excessive. Rainfall amounted to nearly 3 inches. Winds easterly much of the time.
August 10, 1867..........	75	64 to 87	78	1.76	30.11	Variable, sultry and showery. The sky overcast the last five days of the week. Much more rain fell on the northern than on the southern half of the city.
August 17, 1867..........	76	65 to 88	71	2 56	29.91	Heavy rains continue. Atmospheric humidity excessive the last five days of the week. The sky overcast most of the time. 11¾° Fahr. hotter than in corresponding week in 1866.
August 24, 1867..........	75	58 to 90	71	1.52	29.90	Rained every day except Saturday. Humidity of the air excessive every day. Winds southerly and easterly, with much calm.
August 31, 1867..........	70	55 to 84	62	1.42	30.00	Cloudy and sultry most of the week. Light winds veering from all points; but the air has been dryer, and its barometric pressure greater than in the previous two weeks.
Average for the month ..	74	59 to 88	70	10.08	29.97	*These five weeks have given New York a kind of tropical weather such as has not been experienced before since 1853.*
September 7, 1867.......	72	60 to 84	67	.47	30.01	A cloudy and sultry week until Saturday, when a drying wind began to blow from the N. E. Winds during first six days of the week southerly and easterly most of the time.
September 14, 1867.......	64	50 to 80	56	.00	30.06	Weather cool and invigorating throughout the week. Winds westerly most of the time.
September 21, 1867.......	70	46 to 89	66	.75	30.14	Mostly clear, with moderate breeze. A thunder-shower on the 20th inst. An unusually warm week for this season.
September 28, 1867.......	59	43 to 75	54	.11	30.08	This week averaged 11° cooler than the last. Weather cool and invigorating.
Average for the month ..	66	50 to 82	61	1.33	30.07	*Four weeks of the pleasantest weather since the autumn of 1866. Temperature 2° warmer than the average of corresponding weeks in twenty-five years.*
October 5, 1867..........	58	40 to 71	56	1.50	29.81	Alternately foggy, windy and rainy. The extreme range of temperature 1st and 2d days of October, equalled 36° Fah.
October 12, 1867.........	50	37 to 70	61	1.25	29.94	The weather was cool, clear and invigorating throughout the week, with some rain during the last three days.
October 19, 1867..........	59	46 to 80	56	.00	29.99	The average temperature of this week was 9° warmer than that of the previous week. The weather very calm. Winds westerly and southerly.
October 26, 1867..........	52	34 to 71	57	.02	30.22	The temperature averaged 7° lower than last week. Winds westerly the last of the week.
Average for the month...	55	39 to 73	57	2.77	29.99	*Four weeks of dry and pleasant weather; several days in third and fourth weeks were Indian summer-like.*

Meteorological Observations—Continued.

DATE.	Mean temperature (Farenheit's scale).	Greatest range of temperature in the week.	Av. humidity. (Saturation being 100.)	Total rainfall. (Inches of water.)	Mean pressure of the atmosphere.	Remarks Concerning the Winds and other Aspects of the Weather.
November 2, 1867........	52°	40° to 60°	65°	2.75	29.86	A fog on Monday was succeeded by a fall of .39 in the barometer on Monday night and Tuesday morning. More than $2\frac{1}{2}$ inches of rain fell between 1 and $11\frac{1}{2}$ A. M. Light rain and a fine rainbow at 4 P. M.
November 9, 1867........	47	32 to 70	61	.50	29.97	The temperature 5° colder than in the last week. Wind and weather very changeable.
November 16, 1867........	42	36 to 65	60	.44	29.83	The temperature averaged 5° lower than in the last week. Self-registering thermometer showed 36° Fahr. Thursday morning before daylight, and fell below freezing point four nights this week.
November 23, 1867........	36	16 to 54	55	.13	30.02	A cold week. The self-registering thermometer fell below freezing-point the first four nights of the week. Mean temperature in the week 8° colder than in the corresponding week last year.
November 30, 1867........	44	16 to 60	66	.63	29.94	Mean temperature this week 8° warmer than the last, but on the 30th inst. before daylight in the morning the mercury fell to 16° Fahr., and averaged during the twenty-four hours only 26°.
Average for the month....	44	28 to 62	61	4.45	29.92	*These five weeks have partaken of the character both of the most delightful autumn and the beginning of wintry inclemency.*
December 7, 1867........	29	13 to 45	46	.16	29.88	The mean temperature December 1st was 14° below freezing-point—the coldest since January, 1867. Lunar halo and high wind
December 14, 1867........	18	1 to 35	49	1.24	29.86	Steadily cold. Friday, the 14th inst., was the coldest since February 5th, 1863, and $\frac{1}{4}$° colder than December 21st, 1866. A dry snow, nearly 18 inches in depth, fell during the 12th inst.
December 21, 1867........	25	15 to 40	59	.00	29.95	The winds westerly, but variable all the week. The temperature nearly 7° warmer than in the previous week. Snow and sleet during the 20th and 21st inst.
December 31, 1867, 10 days	35	15 to 50	66	1.02	30.02	Rain and flurries of snow on the 22d, 23d, 24th, 26th, 27th, 28th, and a great storm on the 30th and 31st; this snow-storm was apparently a great cycloid, which drove forward north-easterly from the Gulf States to the banks of Newfoundland.
Average for the month....	27	11 to 42	55	2.42	29.93	*The mean temperature in this December is found to be nearly 8° colder than that of the twenty-five years ending December, 1850. The two great snow-storms this month have been the heaviest of which we have any record these fifty years in the city of New York.*
Mean for the year 1867....	50·33	36 to 66·9	$\frac{60·75}{100}$	57·57 Inch's	29.95	*The mean temperature was 0·680 lower than the mean of 25 years. The total rainfall was 11·31 inches greater than the average of 25 years.*

Appended Statement No: III.

Sanitary Qualities of the Water-supply.

The probability that cholera would revisit the Metropolitan District during the summer of 1867, made it very desirable to know and place on record the results of chemical analysis of the drinking-water which is supplied to the cities of New York and Brooklyn. This object has been attained through the kindness and scientific zeal of Dr. C. F. Chandler, the able Professor of Chemistry in the "*School of Mines*," Columbia College.

Prof. Chandler first visited, with the writer, the principal *wells* which continued to be used in certain "cholera fields" up town. Various samples of water were obtained from such wells as had, in the cholera season of the previous year, been suspected of aiding the fatal activity of that infection, both in consequence of common kinds of filth-soakage into them, and, especially in consequence of the contamination of their oozing waters by the specific contagium of cholera itself. The samples of these waters were obtained at a period in summer when the surrounding grounds were unusually cleanly, owing to the scavenging that followed the removal of pig-styes and other nuisances from those neighborhoods. But the results of Prof. Chandler's analysis of these well-waters plainly demonstrated the presence of putrescent organic matter, and a great excess of nitrogenized salts—the hurtful product of the filth-soakage that prevails in the vicinity of the wells. The first schedule in *Table B*, herewith appended, exhibits the chief results of the most favorable analysis hereto obtained from these well-waters.

The last schedule in *Table B* exhibits the results of an analysis of waters from well No. 3, of the first schedule, Prof. Draper's analysis of these well-waters in the summer of 1864, when hundreds of swine and an indescribable condition of filthiness existed in the neighborhood.

The results of this well-water analysis are presented, for the purpose of giving an exact illustration of the kinds of contamination which wells are subject to whenever they receive the soil-soakage of styes, privies, stables, and filth-sodden grounds. Many thousand persons still use this kind of foul but sparkling water in the two cities, notwithstanding the copious flowing of the "Croton" water in New York, and the "Ridgewood" in Brooklyn. And in several of the rural villages of the suburban portions of the Metropolitan District, the chemical and sanitary quality of the drinking-waters is scarcely better than that of these disease-breeding wells in the cities. As the Chief Medical Officer of England recently said of many old towns in that country, we can truly say of many of the rural villages of this District: "Town after town might be named, with thousands upon thousands of population, where there is little more structural arrangement for the removal of refuse *than if the inhabitants were but tented there for a night. And the case of the water-supply is no better.*" What share foul water and the privy-soakage into the wells, may have had in the fatal diarrhœas and typhoid fevers in certain quarters of Richmond, Kings, Queens and Westchester counties, the past year, is not officially reported, but the extent of such unsuspected and self-afflicted harm is too great to be tolerated in civilized communities. Yet there is no law upon the statute-books of New York that can either enable or compel the local authorities in towns and villages to direct such drainage as will protect the well-waters from filth-poisoning.*

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* The writer begs leave in this place to refer to his report upon "Sanitary Drainage," published by the Legislature in 1861, *Transactions N. Y. State Medical Society*. No external cause of disease and death more requires the public attention than this of the filth-poisoning of wells and the neglect of sanitary drainage in villages and about homesteads.

The following instances are cited in illustration of this subject:

During the early part of last autumn, in the most frequented street of the village of Edgewater, Staten Island, a small block of dwellings became infested with typhoid fever. Case after case occurred, and six of them terminated fatally. The first patient is believed to have contracted the fever elsewhere, but the one chief and essential cause of the endemic which swept through those dwellings was ascertained to have been a common underground drain which connected the several dwelling-houses with the waters of the bay; and that drain had been deliberately closed up by the owner of the property on the opposite side of the street, simply because he knew no law that could prevent his doing thus. The sewage of the unsuspecting and hapless tenants was flooded back upon their premises, polluting the well-water and the atmosphere. Six funerals and the protracted illness of nearly half the inhabitants in that little cluster of dwellings, were the direct results of that one source of defilement.

In another group of houses, in the same village, a case of typhoid occurred in June, and was soon followed by others. The first two cases were fatal, and four deaths in all occurred there in the space of a few weeks. This place was most favorably located for natural purity of the atmosphere, having an open exposure to the bay at a distance of a few hundred feet.

The medical attendants and the Sanitary Inspector sought for the local causes of the sickness, and soon found that during the wet season the privies pertaining to the dwellings

The Croton Water.

In *Tables B* and *C* is presented in a series of carefully-conducted analyses by Prof. Chandler. The water of the *Reservoirs*, as well as that from the Mining School *hydrant*, at East Fiftieth street and Fourth avenue, was carefully analyzed each week, several weeks in succession. The chemistry of this great fountain of health—the "Croton"—confirms the correctness of the popular belief that it is an exceedingly pure water. And so vitally important is this water-supply, and the variations in its degrees of purity, that the Board of Health cannot fail to maintain a permanent and systematic inquiry concerning the extent, nature, and causes of all deviations from the standard purity of the "Croton," at the distributing reservoir and the hydrants, as Prof. Chandler has been prompted to do by love of the exact and publicly useful applications of the science of which he is a most efficient and erudite cultivator. The remarks with which Prof. Chandler accompanies his tabulated analyses will confer public benefits, by inducing an intelligent watchfulness of the sanitary qualities of drinking waters.

In *Table D* we present an abstract of chemical analysis of the waters now supplied in London, Glasgow, and some other cities. Glasgow (like New York) enjoys a *mountain source* of water-supply, from Loch Katrine; while the water supplied by the "East London Company" is chiefly derived from surface-soil drainings in the great basin of the river Lea, from 600 square miles, and supplies a population exceeding 700,000 persons.

Particular attention is invited to Professor Chandler's notes upon the chemical and sanitary conditions in which organic impurities are found in waters. For, as Dr. Simon and Professor Frankland have shown, the condition, as respects *putrescence*, rather than the greater or lesser percentage of organic matter in water, is particularly important; and still more important is it that the specific and very infectious kind of contamination which comes from privy-soakage, and, most of all, that of *cholera excrement*, should not be permitted so much as by the barest possibility, to defile and poison any well, conduit or reservoir of water. Hence a mountain

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had actually overflowed, and, as stated by the Inspector, "a considerable portion of the liquid filth invaded the well, the cisterns, and the cellars, the latter being constantly flooded." Instances of this kind are constantly occurring in the suburban towns; and in view of them, the words of Dr. Simon, the Sanitary Officer of England, should be applied, viz: "That for a population to be thus poisoned by its own excrement will, some day, be deemed ignominious and intolerable."

stream, as a source of water-supply to a city, is one of the greatest physical blessings the population can have. Such is the "CROTON" of New York.*

So greatly has this subject of the nature and standard purity of civic water-supplies come to be a leading question in all correspondence and records which public hygeists exchange with each other, that we need to present in this place a few facts relating to the sources and sanitary qualities of the metropolitan water-supply, as such facts will be usefully consulted by persons who read this report.

THE SOURCES AND SANITARY QUALITY OF THE CROTON WATER.

The 352 square miles of hill and mountain country embraced within the limits of the watershed or valley of the Croton river and its tributaries, comprise an area which is very completely adapted to yield pure and wholesome water. From more than thirty mountain lakes and a myriad of rivulets, which are fed by perennial springs, which break forth from hillside and mountain, the water for the metropolis flows over beds of diluvial gravel and the primitive rocks, until it reaches the "Fountain Reservoir," at the head of the Aqueduct, where, by the aid of the dam and the bold shores of the river, the original channel becomes a vast basin—six miles in length and four hundred acres in extent—for *sedimentary purification*.† Chemical analysis shows that the water at that fountain reservoir usually contains less than five grains of solid residuum to the gallon; and, as Prof. Chandler's analysis shows, in this report, the average amount of solid residue per gallon of the water, as distributed by the city hydrants, during the past year, was only 4.56 grains.

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* The deadly epidemics that ravaged the city of New York every few years, during the century that preceded the introduction of the Croton water, are believed to have been, in some degree, favored and invited by the soakage of privy defilement into the wells. The earth-pit privies, and nearly thirty cemeteries, had come to occupy fully one-tenth part of the built-up districts of the city; and, in the absence of sewers and flushed water-closets, there was such a preparation for cholera that, when it first gained access to the city, in June, 1832, and had incubated in the filth-sodden soil a few days, it burst upon the city *as by explosion*. The history of that epidemic demonstrated the sanitary necessity for supplying the city with pure mountain water, though the intimate and dependent relation of that explosive and relentless epidemic to the foul wells of the city, and to its wretched privies was not then understood.

M. Volney, when tarrying in New York, many years previously, described the defiled well-waters of New York as follows: "It is so true that the water drunk in the lower part of the city receives filtrations from the cemeteries and privies, that, in Front street, I found the water in my decanters became *ropy*, if kept three days in the month of May, and at length it acquired a cadaverous stench." [See Volney's *Climate and Soil of the United States*, p. 323.]

Previous to the time when the Croton water-supply superseded the disease-breeding wells, and also led to improved sewerage, the city of New York had a chronic habit of suffering from a class of malignant epidemic fevers, which have now disappeared altogether from the sewered districts.

† This artificial lake is a grand "subsidence basin."

The necessities which are now compelling the Croton Aqueduct Commissioners to turn additional mountain streams into the Croton valley will improve rather than impair the average degree of purity, for the great storage reservoir that is now being prepared in the town of Kent, on the northern boundary of Putnam county, covers 300 acres, is 600 feet above tide-level, and is 70 miles distant from the city. The *remoteness* of the sources of our water-supply, the *altitude and natural purity of the lakes and rivulets*, and the wise forethought of the State in granting the necessary power to control and increase the amount and the purity of the supply as exigencies may require, will ensure to the metropolis the sanitary quality of this most excellent water, if the Croton Board continues to be faithful to its great trust. Hitherto there has been no serious defilement of the Croton river by filth-soakage. It must be forever kept unfouled by sewage, and from all pernicious waste of factories and village populations.

The main aqueduct, 45½ miles in length, cemented as it is and carefully guarded, secures the purity of the stream it contains. It gives no such chances for filth-defilement as the East London Company's aqueduct suffers, and which became a source of pestilence in London in 1866.* The water enters the fountain reser-

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* In the Ninth Annual Report of the Medical Department of the Privy Council of England, Dr. J. N. Radcliffe, an expert sanitary observer, whom Dr. Simon selected to study and report upon the localizing causes of epidemic cholera in London in 1866, has put forth in a very clear light the proof that a single one, out of the eight water companies which supply the metropolis, was in some way very directly concerned in producing that great epidemic. That one company (the East London) which supplied less than one-fourth, viz: 700,000 of the population of the metropolis, and that portion of the population by no means most exposed to the *other* causes of cholera, is charged with having caused, in the houses and streets that were supplied with its water, no less than 4,276 out of the total of 5,915 fatal cases of cholera that occurred in London. This is 71 per cent. of the whole! The only peculiarity of that death-giving water was shown to consist in a minute amount of sewage defilement, which, though not sufficient in quantity to increase the average of organic impurities to the extent of a single grain in a gallon above the average of the water supplied by other companies, nevertheless did receive enough of such specific pollution to inflict a fearful pestilence.

In the epidemic of 1854 the same dreadful experiment with sewage defilement was made by the Southwark or Vauxhall Water Company. With only this *one* peculiarity, resulting from taking the water from the Thames near Vauxhall Bridge instead of tapping that river farther up, and with the Lambeth Company; the water of the former company conveyed and distributed the filthy pabulum on which cholera fed. In the same streets and the same district it helped cholera kill 315 persons who used this water, while in the same number of houses the Lambeth Company's patrons suffered but 37 deaths. In the same voir reasonably free from organic matter and from the earthy elements usually found in water. And, guarded as the aqueduct ever should be, with increasing vigilance, its stream can be preserved from every source of pollution. The health-giving blessing of such purity and protection of our water-supply now secured to the metropolis by the wisdom and authority of the State, is in striking contrast with such sewage-defiled water as that of the merely commercial companies which supply London with water. The "East London" or Lea River Company's water, for example, is conducted along the side of the canal-locked and badly polluted river, which has received the sewage of a suburban population numbering 150,000, and at various places the badly-protected aqueduct receives both overflows and soakage from the foul river. Justly has the chief sanitary officer of the English government remarked, in view of experience with epidemics and the commercial or private water companies, that "the advantages offered by such supplies are countervailed by dangers to life on a scale of gigantic magnitude, unless those who administer the supplies are under a very deep sense of responsibility."† The sanitary importance of the excellent water supply which New York enjoys cannot be over-estimated, nor can we sufficiently prize the safeguards by which its continued and constant purity shall be ensured. Nature

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manner the famous tea-water pump near Golden Square, in a naturally healthy neighborhood of the "West End" of London, became the active agent in destroying 500 lives, during a single week, in the families that used that water. Even the people at their country houses, miles out of the city, who, from fondness of that cool and sparkling water, sent daily into town for a supply of it, were seized with cholera and became its solitary victims in rural homes miles away from the "death-dealing Broad street pump."

The suspicion of maliciously poisoned wells, and of poisoned drugs and food, which last summer, in Italian towns, and often elsewhere before, led to mobs and shocking barbarities, are well explained by the present state of scientific knowledge concerning the cholera infection of wells, water-courses and soils by excremental defilement. So, likewise, we may now comprehend the cause and significance of certain deadly and explosive outbreaks of cholera that have so often been limited to single houses, or groups of houses, or to one side of a street, where no other cause than the water supply could be charged with fault; so, too, in many instances, the condition of the sub-soil water (ground water) is ascertained to be the determining *local* cause. And, in reviewing the evidence concerning the cholera bearing and diffusive or epidemic agency of water, Dr. Simon expresses the opinion that streams of water, reservoirs, etc., "which have become contaminated by the cholera contagium, when distributed, splashed about, and wetting and soaking a predisposed district, are dangerous, independently of being drunk by the people." This view of the agency of water in cholera outbreaks seems to aid us in understanding the very comprehensive theory given by Professor Pettenkofer concerning the relations of the "ground-water" to cholera epidemics. Taken together, as harmonious views, these grand conclusions show the paramount importance of sanitary drainage, and of strict safeguards upon water-supplies.

* Ninth Report of the Medical Officer of the Privy Council, 1867, p. 34.

and the wise provision of noble citizens and legislators have done their share to secure this benificent result. It now remains for sanitary chemistry and systematic care to anticipate and absolutely prevent every source and possibility of defilement of the stream. Mills and chemical works of various kinds, rapidly increasing rural villages, and all liabilities to sewage and filth defilement, will henceforth demand watchfulness along the Croton valley. And it will manifestly be a sanitary duty to maintain a systematic scientific testing and record of the water, for it is continually subject to variations from a normal and perfectly healthful stardard.

Of course the most important variations occur in respect to the nature and percentage of organic impurities, while, at the same time, the increase and the self-production of every kind of organic impurity, even the minutest *confervoid* plants, depend mainly upon some fructifying infusion of defilement.* It will always be easier to know beforehand the nature and progress of an unfavorable change in the quality of the water, than to satisfy or prevent popular anxiety, when some new evil has acquired sufficient magnitude to excite public attention. The manner in which Prof. Chandler has enabled the Board of Health to keep a weekly record of the Croton water analysis the past year proves that such work results only in the good which comes from constant assurance and knowledge of the physical agencies which are concerned in health and disease.

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* Though the greater part of all organic matter found in the Croton water is derived from the minute *algæ* that abound in all waters, it is quite certain this source of organic impurity is far less important than the slightest defilement by any kind of animal excrement. The greenish color and bitter taste of the water, that gave so much popular anxiety for a few days in the autumn of 1859, were found by Prof. Torrey to have been caused by the amazingly rapid growth and decay of the minutest of *confervæ*, which that distinguished botanist regarded as belonging to the curious genus of minute water-plants termed *Nortoc.*

The common opinion which prevails in our city, and is quoted as a fact in numerous sanitary reports abroad, that the rate of Croton water-supply is equal to about 300 gallons *daily*, to each inhabitant of the city, is erroneous. The actual rato is only about *thirty* gallons daily. The minimum flow of the Croton river, in dry seasons, is less than 30,000,000 of gallons per diem at the Croton dam; aud at the best does not much exceed 50,000,000 gallons daily. The grand extension of the Croton supply, by means of storage reservoirs in the mountain district of the upper tributaries in Putnam and Dutchess counties and the border of Connecticut, will hereafter give a greater and even purer supply than is now enjoyed.

The average daily rate of Croton supply in the city and its Institutions seldom exceeds one barrel of water to each inhabitant. Hygienic considerations demand that the supply should be equal to fifty gallons per diem to each inhabitant, exclusive of all waste or use for public cleansing and mechanical purposes. Ancient Rome enjoyed an aqueduct supply equal to an average of 300 to 340 gallons daily to every inhabitant of the city. Hospital experience has proved that not less than sixty gallons of water daily to each patient is required in such institutions; and the requirements of a dense city population are scarcely less than those of a hospital, because sanitary security in our cities is mainly a problem of *ceaseless cleansing.*

SOURCES AND SANITARY QUALITY OF THE RIDGEWOOD WATER-SUPPLY, BROOKLYN.

The nearly eighty square miles of "water shed," from which the Ridgewood conduits convey the water of the rivulets and ponds from the sandy plain that extends eastward from Jamaica, *constitute a vast filter-bed* for the water of the rainfalls, as it slowly moves southward, through sand and gravel, from the central ridge ("back-bone") of the island, toward the sea. The exceeding purity of the spring water which bursts forth at a multitude of places near the seashore of Long Island, is a fact well known. The central ridge of the island—a terminal morain of an ancient glacier, as geologists believe—determines the direction of the flow of water from it and the great flank of diluvial gravel and alluvial sand to the southward. The main conduit of the "Ridgewood" works intercepts the springs and rivulets near tide-level in Jamaica and Hempstead, and conducts the waters there collected some twelve miles, with a descending grade of only six inches in a mile, to the great "pump well," (five miles distant from Brooklyn City Hall) where it is pumped into a reservoir that is 170 feet above tide-level. The 14,000,000 gallons which that city now receives every day are nearly, if not quite, equal to the Croton water, in purity. But the *liability* to contamination is actually much greater; consequently, the importance of constant watchfulness against sewage-defilement of the rivulet sources of supply is correspondingly greater.

The subjoined table exhibits the results of Prof. Eaton's analysis of the Jamaica pond water, in 1860—then, as now, the chief source of supply. And it should be observed that a portion of the solid constituents, as summed up in this table, becomes sedimentary, and is thereby separated from the reservoir water before distribution to the city.

TABLE A.

Analysis of the Water from the Centre of Jamaica Pond. By A. K. Eaton, M.D., *Analytical Chemist—January*, 1860.

Lime	.697	grs.
Magnesia	.211	"
Sodium	.073	"
Phosphates (iron and alumina)	.369	"
Sulphuric Acid	.195	"
Chlorine	.113	"
Carbonic Acid, in combination	.804	"
Silica	.703	"
Organic matter	1.234	"
In one gallon	4.399	"

Combined as follows :

Carbonate of Lime	.998	grs.
Sulphate of Lime	.332	"
Chloride of Sodium	.186	"
Carbonate of Magnesia	.577	"
Phosphates (iron and alumina)	.369	"
Silica	.703	"
Organic matter and loss	1.234	"
In one gallon	4.399	"

Brooklyn enjoys an exhaustless and excellent source of water-supply, though its population should increase to a million or more ; for both faces (the northward and the southward) of the long, central ridge, or axis of Long Island, constitute a vast filter-bed of sand and gravel, through which the rainfalls slowly make their way to the living springs which appear near either shore. But this most important of the natural causes of the *purity* of the water already requires to be specially guarded against one of the most insidious agents of disease—we refer to the defilement of rivulets in the vicinity of growing villages and cemeteries. And this precaution is beginning to be *a sanitary necessity*, not only with regard to the great reservoir supplies for Brooklyn, but with regard also to the well-waters, and other private and public supplies of the suburban villages. Sanitary chemistry, and timely work in engineering, will be invaluable aids to protection of the public health in the growing population of Kings and Queens counties.

Having been led to examine the chemical impurities of a great number of well-waters, during the year 1866, the advice of Professor Chandler, of Columbia College, was solicited on account of his special experience and studies in this branch of chemical inquiry. His plan, for a preliminary series of examinations of the chief sources of water-supply, was adequate to meet the exigencies of an epidemic, if the Board should wish. The first step in this branch of sanitary inquiry having been taken, the following statements and accompanying tables are submitted by Professor Chandler, and will constitute a chapter for future use, when the records of water-analysis come to be systematically required by the Water Commissioners and the Metropolitan Board of Health.

The analysis of the water-supplies of other cities, as given in subjoined tables, presents the requisite standards—good and bad—for the comparisons we may hereafter desire to make. It is an original and trustworthy compilation of analyses, several of which were made by Professor Chandler himself. They also show the importance of obtaining, and systematically recording, such analyses of drinking-waters.

SCHOOL OF MINES, COLUMBIA COLLEGE,
NEW YORK, *January* 22, 1868.

ELISHA HARRIS, M.D.,
Corresponding Sec'y, Metropolitan Board of Health:

Dear Sir—Herewith you will receive the results of my examination of Croton water, made during the summer of 1867. The examination was undertaken at your suggestion, and I was induced to make it by a strong conviction of the *importance* of a thorough knowledge of the composition of the waters used in the metropolis, and of the changes *liable to occur* in them from week to week.

My original plan included a weekly analysis of the Croton and Ridgewood waters, and an occasional analysis of the water from every well now used in the cities and villages of the Metropolitan District. I found the number of wells to be much greater than I had supposed, however, and other engagements interfered with my plans, so that I have been able to execute but a small portion of the work laid out.

The accompanying report exhibits the results of the weekly examinations of Croton water during the thirteen weeks from July 19 to October 10, 1867. The samples were collected on Wednesday or Thursday of each week at

The Reservoir in the Central Park.

The Reservoir on Fifth avenue and Forty-first street.

The Hydrant at the School of Mines, corner of Fourth avenue and Fiftieth street.

The examination was limited to the determination of

1. The total impurities.
2. The inorganic matter.
3. The organic and volatile matter.
4. The oxygen required to oxidize the organic matter.
5. The hardness, or the carbonate of lime, or its equivalent.

The quantity of oxygen required to oxidize the organic matter in the water, is considered the best measure of its injurious character, as the organic matter is injurious in proportion as it is ready to undergo decomposition. In Dr. Letheby's reports of analyses of London waters, made to the Metropolitan Association of Medical Officers of Health, this oxygen is supposed to represent eight times its weight of oxidable organic matter, and is so reported. I think this estimate excessive, and as it is a mere assumption, prefer to report the oxygen directly.

The results of the analyses are tabulated in parts in 100,000, and in grains in one United States gallon of 231 cubic inches.

Owing partly to the excessive rainfall of the past summer, but chiefly to the character of the district of country from which the supply of water is drawn, the results of the analysis are most satisfactory. The average quantity of impurities for the entire season was only

	In 100,000 parts.		In 1 U. S. gallon.
Inorganic matter..........	6.72	....	3.90 grains.
Organic and volatile matter,	1.12	....	0.66 "
Total	7.84	....	4.56 "

At the same time there was great uniformity in quality, the extremes of total impurity during the season having been 3.99 and 4.98 grains per gallon.

Accompanying this report are tabular statements of the composition of waters used in several large cities in the United States and Europe, in which it will be seen that it is only in the Cochituate, of Boston, and the Schuylkill, of Philadelphia, that the water is found to be as little contaminated with impurities; and even in these cities the quantity of organic matter exceeds that contained in the Croton water.

Would that the same statements could be made with regard to the two or three hundred wells now used in the villages and cities of the Metropolitan District, most of which are heavily charged with organic matter, derived from infiltering sewage, and ready, under favorable conditions, to develop cholera and other fatal diseases.

The character of these well-waters is faintly indicated by the analysis which I reported on July 12th. I say faintly, because the grounds in the immediate neighborhood of those wells had been cleared of numerous sources of contamination by the orders of the Board of Health, and because the heavy rains which had prevailed for some time had cleaned the district and diluted the waters. Notwithstanding these circumstances the water of one of the wells showed

	In 100,000 parts.	In 1 gallon.
Inorganic matter	66.8	38.95 grains.
Organic matter	7.8	4.55 do
Total	74.6	43.50 do

These wells should be very carefully looked after, that they may not be permitted to pass a certain maximum limit of foulness before they are closed, at least temporarily, for the protection of those families who are unfortunately obliged to make use of them.

At some future time, I hope to be able to lay before you the results of the more comprehensive examination which the water-supplies of the Metropolitan District imperatively demand.

These analyses were conducted according to the methods employed by Prof. W. A. Miller, Dr. A. W. Hofmann, and Dr. E. Frankland, Journal of the London Chem. Soc., New Series, III., 117, 1865; IV; IV., 239, 1866.

I should mention that I have been materially aided in this examination by Dr. H. Endemann, my private assistant.

Very truly yours,
C. F. CHANDLER, PH. D.

TABLE B, No. I.

New York Well Waters. Analyses by Prof. C. F. CHANDLER.

I. Results calculated for 100,000 parts water.

	Color.	Inorganic matter.	Organic and volatile matter.	Total solids.	Oxygen required to oxidize organic matter.*	Carbonate of lime, or its equivalent. "Hardness."
Well No. 1	None.	66.8	7.8	74.6	0.0666	18.45
Well No. 2	None.	41.9	trace.	41.9	0.0454	13.00
Well No. 3	None.	69.1	3.4	72.5	0.0590	8.10

II. Results calculated in grains for one U. S. gallon of 231 cubic inches.

	Color.	Inorganic matter.	Organic and volatile matter.	Total solids.	Oxygen required to oxidize organic matter.*	Carbonate of lime, or its equivalent. "Hardness."
Well No. 1	None.	38.95	4.55	43.50	0.0388	10.76
Well No. 2	None.	23.96	trace.	23.96	0.0265	7.58
Well No. 3	None.	40.30	1.98	42.28	0.0344	4.72

SCHOOL OF MINES, COLUMBIA COLLEGE,
NEW YORK, *July* 12, 1867.

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* Owing to an unavoidable delay, these waters were allowed to stand some days before they were treated with permanganate of potassa; the numbers in this column are consequently much smaller than they would otherwise have been.

TABLE B, No. II.

Report of an Analysis of a Sample of Water from Well in the Twenty-second Ward, by Prof. Draper, in 1864.

			Grains.
Organic matter and volatile salts, per gallon		....	$23\frac{88}{100}$
Fixed salts,	do	....	$24\frac{29}{100}$
Total solid residue,	do	....	$48\frac{17}{100}$

(Signed) HENRY DRAPER, M. D.

Chemical Laboratory, University of New York,
October 4, 1864.

Prof. John W. Draper, who superintended this analysis, added the following note:

University Medical College,
107 East Fourteenth street,
New York, *October* 4, 1867.

Dr. E. Harris :

Dear Sir: I enclose the analysis of the sample of water sent by Dr. J. L. Smith. You see at once what is its peculiarity—the very large amount of organic matter. This is reported to me to have been of the most fetid kind, suggesting the proximity of a sewer, privy, or some other putrid receptacle.

Now, there is obviously but one thing to be done in such a case. It is to close up the well. The people that use it are drinking so much liquid poison, and no wonder they have bowel complaints.

Compare the filthy water with waters elsewhere used. It has, in a gallon, more than 48 grains of solid matter, half of which is organic. But the Thames water has only 15 grains, the Seine water 20 grams, and the Danube 10¼ grains.

Yours truly,

(Signed) JOHN W. DRAPER, M. D.,

Prof. Chemistry and Physiology, University of N. Y.

TABLE C, No. I.

Analyses of the Croton Water, at various periods, during the summer of 1867, *by Prof.* C. F. Chandler, *of Columbia College.*

Daily Examination of Croton Water, drawn from the Hydrant at the School of Mines, Fourth Avenue and East Fiftieth Street.

I. Results calculated for 100,000 parts of water.

	Color.	Inorganic matter.	Organic and volatile.	Total solids.	Oxygen required to oxidize organic matter.	Carbonate of lime, or its equivalent. "Hardness."
Croton (Hydrant), June 27........	Yellow.	....	....	....	0.1757	....
Croton (Hydrant), June 28.........	Yellow.	5.50	0.60	6.10	....	4.00
Croton (Hydrant), June 29.........	Yellow.	....	....	....	0.2059	....
Croton (Hydrant), July 1.........	Yellow.	....	....	....	0.1878	....
Croton (Hydrant), July 2.........	Yellow.	....	....	....	0.1727	....
Croton (Hydrant), July 3.........	Yellow.	....	....	....	0.1696	....
Croton (Hydrant), July 5.........	Yellow.	....	....	....	0.1757	....
Croton (Hydrant), July 8.........	Yellow.	6.18	0.85	7.03	....	....

II. Results calculated in grains for one U. S. gallon of 231 cubic inches.

Croton (Hydrant), June 27.........	Yellow.	....	....	....	0.1024	....
Croton (Hydrant), June 28.........	Yellow.	3.21	0 35	3.56	....	2.333
Croton (Hydrant), June 29.........	Yellow.	....	....	....	0.1201	....
Croton (Hydrant), July 1.........	Yellow.	....	....	....	0.1095	....
Croton (Hydrant), July 2.........	Yellow.	....	....	....	0.1007	....
Croton (Hydrant), July 3.........	Yellow.	....	....	....	0.0989	....
Croton (Hydrant), July 5.........	Yellow.	....	....	....	0.1024	....
Croton (Hydrant), July 8.........	Yellow.	3.60	0.49	4.09	....	....

TABLE C, No. II.

Weekly examination of the Croton Water during the Summer of 1867, by Professor C. F. Chandler, *of the School of Mines, Columbia College.*

I. Results calculated for 100,000 parts of water.

DATE.	SOURCE OF WATER.	Inorganic matter.	Organic and volatile matter.	Total solids.	Oxygen required to oxidize organic matter.	Carbonate of lime or its equivalent. "Hardness."
July 19..	Hydrant, Columbia College....	5.60	1.30	6.90	0.1779	4.05
19..	Reservoir, Fifth avenue......	6.00	1.45	7.45	0.1737	4.17
19..	Reservoir, Central Park......	5.50	1.35	6.85	0.1715	4.07
July 25..	Hydrant, Columbia College ...	6.07	1.35	7.42	0.1838	4.30
25..	Reservoir, Fifth avenue.......	6.47	1.20	7.67	0.1986	4.37
25..	Reservoir, Central Park......	6.00	1.10	7.10	0.1853	4.40
Aug. 1..	Hydrant, Columbia College....	7.05	1.05	8.10	0.1859	4.25
1..	Reservoir, Fifth avenue	7.10	1.15	8.25	0.1888	4.20
1..	Reservoir, Central Park	7.10	0.90	8.00	0.2046	4.30
Aug. 8..	Hydrant, Columbia College....	6.20	1.80	8.00	0.1983	4.30
8..	Reservoir, Fifth avenue.......	6.45	1.65	8.10	0.1865	4.30
8..	Reservoir, Central Park.......	6.15	1.70	7.85	0.1983	4.21
Aug. 15..	Hydrant, Columbia College....	6.50	2.00	8.50	0.2136	4.20
15..	Reservoir, Fifth avenue.......	6.45	1.80	8.25	0.2194	4.31
15..	Reservoir, Central Park	6.60	1.70	8.30	0.2136	4.40
Aug. 22..	Hydrant, Columbia College....	6.20	1.20	7.40	0.2136	4.10
22.	Reservoir, Fifth avenue.......	6.35	1.30	7.65	0.2194	4.11
22..	Reservoir, Central Park.......	6.15	1.15	7.30	0.2136	4.00
Aug. 29..	Hydrant, Columbia College ...	6.75	0.85	7.60	0.1913	4.20
29..	Reservoir, Fifth avenue......	6.75	0.95	7.70	0.1958	4.22
29..	Reservoir, Central Park.......	7.41	1.11	8.52	0.1987	4.30
Sept. 5..	Hydrant, Columbia College....	6.65	1.75	8.40	0.1750	4.31
5..	Reservoir, Fifth avenue.......	6.95	1.61	8.56	0.1809	4.39
5..	Reservoir, Central Park......	6.95	1.30	8.25	0.1824	4.32
Sept. 12..	Hydrant, Columbia College....	6.81	1.25	8.06	0.1483	4.41
12..	Reservoir, Fifth avenue.......	6.61	1.32	7.93	0.1483	4.50
12..	Reservoir, Central Park.......	6.95	1.21	8.16	0.1468	4.52
Sept. 19..	Hydrant, Columbia College....	6.62	0.92	7.54	0.2091	4.30
19..	Reservoir, Fifth avenue.	7.30	0.85	8.15	0.2032	4.30
19..	Reservoir, Central Park.......	7.31	0.91	8.22	0.2002	4.42
Sept. 26..	Hydrant, Columbia College....	6.40	1.05	7.45	0.1920	4.40
26..	Reservoir, Fifth avenue.......	6.91	0.90	7.81	0.1979	4.59
26..	Reservoir, Central Park.......	7.02	1.11	8.13	0.1979	4.61
Oct. 4..	Hydrant, Columbia College....	6.95	0.15	7.00	0.1241	4,31
4..	Reservoir, Fifth avenue.......	7.65	0.27	7.92	0.1270	4.48
4..	Reservoir, Central Park.......	7.60	0.25	7.85	0.1211	4.50
Oct. 10..	Hydrant, Columbia College....	7.21	0.61	7.82	0.1270	4.38
10..	Reservoir, Fifth avenue.......	7.32	0.60	7.92	0.1299	4.50
10..	Reservoir, Central Park.......	7.30	0.52	7.82	0.1270	4.58
	Thirteen weeks' average ...	6.72	1.12	7.84	0.1809	4.32

TABLE C, No. III.

II. *Results Calculated in Grains for One U. S. Gallon of 231 Cubic Inches.*

DATE.	SOURCE OF WATER.	Inorganic matter.	Organic and volatile matter.	Total solids.	Oxygen required to oxidize organic matter.	Carbonate of lime, or its equivalent. "Hardness."
		Grains.	Grains.	Grains.	Grains.	Grains or deg's.
July 19...	Hydrant, Columbia College....	3.26	0.76	4.02	0.1038	2.36
19...	Reservoir, Fifth avenue.......	3.50	0.84	4.34	0.1013	2.43
19...	Reservoir, Central Park.......	3.20	0.79	3.99	0.1000	2.37
July 25...	Hydrant, Columbia College....	3.54	0.79	4.33	0.1072	2.51
25...	Reservoir, Fifth avenue.......	3.77	0.71	4.47	0.1159	2.55
25...	Reservoir, Central Park.......	3 50	0.64	4.14	0.1081	2.56
Aug. 1...	Hydrant, Columbia College....	4 11	0.61	4.73	0.1084	2.48
1 ..	Reservoir, Fifth avenue.	4.14	0.67	4.81	0.1101	2.45
1...	Reservoir, Central Park.......	4.14	0.52	4.66	0.1193	2.51
Aug. 8...	Hydrant, Columbia College....	3.61	1.05	4.66	0.1156	2.51
8...	Reservoir, Fifth avenue.......	3.76	0.96	4.73	0.1087	2.51
8...	Reservoir, Central Park.......	3.58	0.99	4.57	0·1156	2.45
Aug. 15...	Hydrant, Columbia College....	3.79	1 16	4.95	0.1245	2.45
15...	Reservoir, Fifth avenue.	3.76	1.05	4.81	0.1280	2.51
15...	Reservoir, Central Park.......	3.85	0.99	4.84	0.1245	2.56
Aug. 22...	Hydrant, Columbia College....	3.61	0.70	4.31	0.1115	2.39
22...	Reservoir, Fifth avenue.......	3.70	0.76	4.46	0.1142	2.39
22...	Reservoir, Central Park.......	3.58	0.67	4.25	0.1159	2.33
Aug. 29...	Hydrant, Columbia College....	3.94	0.49	4 43	0.1020	2.45
29...	Reservoir, Fifth avenue.......	3.94	0.55	4.49	0.1055	2.45
29...	Reservoir, Central Park.......	4.31	0.64	4.95	0.1050	2.51
Sep. 5...	Hydrant, Columbia College....	3.88	1.02	4.90	0.0864	2.51
5...	Reservoir, Fifth avenue.......	4.05	0.93	4.98	0.0864	2.56
5...	Reservoir, Central Park.......	4.05	0.76	4.81	0.0856	2.51
Sep. 12...	Hydrant, Columbia College....	3.96	0.73	4 69	0.1219	2 56
12...	Reservoir, Fifth avenue.......	3.84	0.76	4.60	0.1185	2.62
12...	Reservoir, Central Park.......	4.05	0.70	4.75	0.1168	2.62
Sep. 19...	Hydrant, Columbia College....	3.85	0.52	4.37	0.1219	2.51
19...	Reservoir, Fifth avenue.......	4.25	0.50	4.75	0.1237	2.51
19...	Reservoir, Central Park... ...	4.25	0.52	4.77	0.1246	2.56
Sep. 26...	Hydrant, Columbia College....	3.73	0.61	4.24	0.1119	2.56
26...	Reservoir, Fifth avenue.	4.02	0.52	4.54	0.1153	2.68
26...	Reservoir, Central Park.......	4.08	0.64	4.72	0.1153	2.68
Oct. 4...	Hydrant, Columbia College....	4.05	0 08	4.13	0.0723	2.51
4...	Reservoir, Fifth avenue.......	4.46	0.14	4.60	0.0740	2.62
4...	Reservoir, Central Park.......	4.43	0.14	4.57	0.0706	2.62
Ot. 10...	Hydrant, Columbia College....	4.20	0.35	4.55	0.0740	2.56
10...	Reservoir, Fifth avenue.......	4.25	0.35	4.60	0.0758	2.62
10...	Reservoir, Central Park.......	4.25	0.29	4.54	0.0741	2.68
	Thirteen weeks' average	3.90	0.66	4.56	0.1055	2.51

TABLE D, No. I.

Abstract from the Officially Published Analysis of Waters supplied in Various Cities.

Analysis of the Waters supplied to London, in November, 1867. *By Prof.* Frankland, F. R. S., *of the Royal College of Chemistry, London.*

Royal College of Chemistry, *Nov.* 30, 1867.

COMPANIES.	Total solid impurity in 100,000 parts.	Organic carbon.	Nitrogen as nitrates and nitrites.	Ammonia.	Total combined nitrogen.	Previous sewage contamination. (Estimated.)	Total hardness.
Thames.							
Chelsea	29.6	.263	.222	.003	.242	1,920	20.5
West Middlesex	28.4	.286	.225	.002	.245	1,950	20.6
Southwark and Vauxhall	29.8	.259	.183	.001	.203	1,520	21.7
Grand Junction	29.8	.277	.210	.001	.229	1,790	22.8
Lambeth	31.0	.268	.229	.001	.249	1,980	22.8
Other Sources.							
New River (unfiltered)	25.2	.104	.187	.001	.208	1,560	18.5
" (filtered)	24.8	.075	.176	.001	.179	1,450	18.6
East London	30.2	.118	.156	.001	.164	1,250	21.8
Kent	42.9	.113	.364	.001	.369	3,330	29.1

Analysis of the Waters supplying Glasgow, Lancaster and Manchester, by Prof. Frankland, *during the Autumn of* 1867.

COMPANIES.	Total solid impurity in 100,000 parts.	Organic carbon.	Nitrogen as nitrates and nitrites.	Ammonia.	Total combined nitrogen.	Previous sewage contamination. (Estimated)	Total hardness.
Lock Katrine (for Glasgow)	3.28	.256	.031	.002	.041	.....	0.3
Lancaster	3.54	.157	.036	.001	.038	.....	0.1
Manchester	6.8	.242	.001	.001	.028	.....	2.7

"The numbers in the columns all relate to 100,000 parts of the waters. . . . .

"The animal charcoal, through which the New River Company's water was passed, has now been in constant use for six months; nevertheless the amount of organic matter left in the water after passage through the charcoal has only just perceptibly increased.

On the 1st of June 100,000 parts of the filtered water contained .07 part of organic carbon and no organic nitrogen, while on the 19th of November, 100,000 parts of water passed through the same charcoal, contained .075 part of organic carbon, and .002 part of organic nitrogen.

"I have, &c.,

(Signed) "E. FRANKLAND.

"The Registrar General of England."

NOTE.—The Metropolitan Board of Health is indebted to the courtesy of Dr. Wm. Farr, of the Registrar-General's office, of London, for this lucid exhibit of the water analyses which, at his earnest suggestion, have been made at regular intervals, and furnished in this manner to the Registrar-General's office, London.

E. H.

The following table shows the results of Dr. Letheby's analysis of the well and the river waters of London:

TABLE D, No. II.

Composition and Quality of the Metropolitan Waters in October, 1867, *by* H. LETHEBY, M. D., *Health Officer of London within the Walls.*

WATER COMPANIES.	Total solid matter per gallon.	Loss by ignition.*	Oxidizable organic matter.†	HARDNESS. Before boiling.	HARDNESS. After boiling.	Organic and other ammonia.
Thames Water Companies:	Grains.	Grains.	Grains.	Degrees.	Degrees.	Grains.
Grand Junction	19.67	1.00	0.56	13.5	4.5	0.004
West Middlesex	16.67	0.85	0.52	12.5	4.0	0.004
Southwark and Vauxhall	18.50	1.00	0.59	13.0	4.5	.....
Lambeth	19.00	1.25	0.60	13.5	4.5	0.004
Other Companies:						
Kent	27.50	0.75	0.26	18.0	7.5	0.000
New River	17.00	0.25	0.31	12.0	3.0	0.001
East London	19.20	0.50	0.49	13.0	4.5	0.001
Surface Wells in City.						
Idol lane (Church)	81.33	2.00	0.06	32.0	16.0	0.004
Leadenhall street	120.00	11.51	1.51	50.0	....	1.281
Dunning's alley	74.67	8.00	0.96	36.0	....	0.008

* The loss by ignition represents a variety of volatile matters, as well as organic matter, as ammoniacal salts, moisture, and the volatile constituents of nitrates and nitrites.

† The oxidizable organic matter is determined by a standard solution of permanganate of potash—the available oxygen of which is to the organic matter as 1 is to 8; and the results are controlled by the examination of the color of the water when seen through a glass tube two feet in length and two inches in diameter.

TABLE D, No. III.

Waters of Paris, analyzed by Bussey, Wurtz *and* Ville, 1861.

Results calculated for 100,000 parts of Water.

	Reservoir Passy.	Reservoir Montmartre.	Seine, above Paris.
Lime	10.400	10.000	8.740
Magnesia	0.750	0.800	0.460
Potassa	1.000	1.000	1.070
Soda	2.500	2.400	
Chlorine	0.780	0.700	0.700
Sulphuric acid	2.800	2.000	0.930
Silica	0.980	0.700	1.100
Nitric acid	0.560	0.510	0.410
Ammonia	0.043	0.022	0.017
Organic matter	3.200	3.500	1.700
Total	23.013	21.232	15.127

TABLE E.

Waters of Stockholm, Sweden.

Results calculated for 100,000 parts of water.

	Inorganic matter.	Organic and Volatile matter.	Total Solide.
Maelar Lake (Alex. Mueller)	47.00	7.00	54.00
Haga Palace (Dr. Bahr)	27.88	3.26	31.14
Grundsborg (Dr. Bahr)	20.25	1.95	22.20
Well at the Military Hospital, (Alex. Mueller)	95.00	12.00	107.00
Well on Handwerker Strasse, near the Churchyard (Alex. Muller)	389.00	23.00	412.00

Analyzed by Dr. BAHR.

	Haga Palace.	Grundsborg.
Chloride of sodium	2.74	3.55
Sulphate of lime	5.90	3.80
Carbonate of lime	13.14	7.19
Carbonate of magnesia	2.13	2.16
Nitrate of potassa	0.11*	0.38*
Nitrate of lime	2.88*	2.33*
Silica	0.98	0.84
Organic matter	3.26	1.95
Total	31.14	22.20
* The nitric acid was determined by loss, at	1.95	1.73

Waters of Amsterdam, Holland. Analyzed by VON BAUMHAUER *and* VAN MORRSEL.

Results calculated for 100,000 parts of water. Water from surface wells.*

	Well at the Amstel.	Well at the Leyden Gate.	Well at the Zaagport.
Chlorine	224.20	154.20	160.10
Sulphuric acid	16.80	3.60	Trace.
Silica	8.90	5.40	6.00
Lime	30.20	23.40	17.70
Magnesia	48.00	31.60	39.30
Alumina and acids of iron	2.70	2.90	5.10
Potassa and soda Ammonia Nitric acid Carbonic acid Organic matter	232.60	212.10	175.10
Total	563.40	433.20	404.20

* These wells are in grounds which were once the bed of sea; hence the great excess of chlorine and chlorides in the well waters.

Table showing purity of Croton Water as compared with the Water of other cities. Compiled by Prof. C. F. Chandler.

Results calculated for 100,000 parts of water.

CITIES SUPPLIED.	SOURCE OF WATER.	Inorganic matter.	Organic and Volatile matter.	Total solids.
New York	Croton: average for 13 weeks, 1867 (Prof. C. F. Chandler)	6.72	1 12	7.84
Brooklyn	Ridgewood* (Prof. Eaton)	4.49	1.79	6.28
Boston	Cochituate (Prof E. N. Horsford)	4.12	1.22	5.34
Philadelphia	Fairmount, Schuylkill " "	3.95	2.06	6.01
"	Delaware (Prof. H. Wurtz)	4.97	1.08	6.05
Albany	Hydrant (Prof. E. N. Horsford)	14.52	3.96	18.48
Troy	Hydrant (Prof. W. Elderhorst	10.44	2.30	12.74
Utica	Hydrant (Prof. C. F. Chandler)	9.43	1.64	11.07
Syracuse	New Reservoir " "	20.81	3.08	23.89
Cleveland	Lake Erie (Prof. J. L. Cassels)	8.13	2.62	10.75
Chicago	Lake Michigan† (Prof. Blaney)	9.63	1.81	11.44
Rochester	Genesee River (Prof. C. F. Chandler)	20.62	2.12	22.74
Schenectady	State street well " "	80.38	4.00	84.38
Newark Jersey City Hoboken and Hudson City	Passaic River (Prof. E. N. Horsford)	7.85	4.90	12.75
Trenton	(Prof. H. Wurtz)	5.02	0.95	5.97
London	Thames: Grand Junction Co. (Dr. H. Letheby)	26.67	1.43	28.10
"	" West Middlesex Co. "	22.60	1.21	23.91
"	" Southwark and Vauxhall Co. (Dr. H. Letheby)	25 78	1.43	27.21
"	" Lambeth Co. (Dr. H. Letheby)	25.36	1.78	27.14
"	" Kent Co. "	38.21	1.07	39.28
"	New River Co. "	23.93	0.35	24.28
"	East London Co. "	26.71	0.71	27.42
"	Well, Leadenhall street "	154.98	16.44	171.42
Dublin	Lough Vartry, new supply (Prof. Apjohn & oths.)	3.04	2.39	5.34
Paris	Seine, above the city (Wurtz, Bussey and Ville)	13.43	1.70	15.13
"	Reservoir, Montmartre " " "	17.73	3.50	21.23
"	Reservoir, Passy " " "	19.81	3.20	23.01
Stockholm	Maelar Lake (Alex. Muller)	47.00	7.00	54.00
"	Haga Palace (Dr. Bahr)	27.88	3.26	31.14
"	Well, Hanwerkerstrasse (Alex. Muller)	389.00	23.00	410.00
Amsterdam	River Vecht...(V. Baumhauer and Van Moorsel)	24.78	3.66	28.44
"	Deep well at the Keisersgracht (V. Baumhauer and Van Moorsel)	110.69	7.51	118.10
"	Artesian well, Bikkerseiland (V. Baumhauer and Van Moorsel)	106.89	2.31	109.20

This Appendix is submitted with the desire that throughout the Metropolitan District the chemical purity and sanitary care of the waters used by the inhabitants shall be regarded worthy of systematic attention; for no other physical agent, except the air we breathe, has such universally important relations to health as the water supply of cities and towns. The public and the Board of Health will more and more appreciate the practical value of this branch of sanitary inquiry which has been so well begun by Professor Chandler. Henceforth the endemic outbreaks of typhoid fever and all bowel diseases should be studied in the light that is shed upon their history by the physical circumstances which sanitary chemistry and the skilled inspection of waters and the drainage of grounds reveal. The most destructive evils may be anticipated and prevented, but no human skill can devise a cure for filth poisons, when once they have gained a fatal control of the blood and tissues of the human body. Protection against the infection of typhoid and some other miasmatic fevers, and against cholera and the incurable kinds of diarrhœal diseases, can be ensured only in this way. E. H.

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* See Prof. Eaton's Analysis, on a preceding page of this Report.

† Taken from Lake Michigan, two miles off shore, where the water-supply enters the submerged aqueduct. Analysis by Prof. Blaney. Dr. John H. Rauch, the Sanitary Superintendent of Chicago, remarks, in a recent letter to us, that "the introduction of pure lake water, no doubt, had a marked influence in diminishing the mortality of the past year. The difference between our water-supply and that of other cities is, that it remains the same during the entire year."

APPENDED STATEMENT No. IV.

Vital Statistics of the Hospitals and other Benevolent Institutions of the City and County of New York.

NAME OF THE INSTITUTION.	Present capacity. Number of beds.	Total admissions in the year.	Total number of cases that received care in the Institution.	Males.	Females.	Native born.	Foreign born.	Deaths—Native born.	Deaths—Foreign born.	Total deaths.	Death-rate per 1,000.	Percent. of mortality on total.	REMARKS.
Hospitils.													
New York Hospital	500	2,221	2,454	2,301	150	727	1,506	57	114	171	69.63	6.96	Of the deaths 56 were coroner's cases, 3 of them females; 71 occurred in the surgical wards in a total of 1,289 cases. The whole number of seamen who received care during the year was 1,398, of whom 57 died.
Bellevue Hospital	800	5,274	6,595	3,396	3,199	2,178	4,417	210	430	640	97.04	9.70	Excluding the casualty and other cases of violent or sudden death which were referred to coroners, and excluding also the deaths by consumption (146), the death-rate in this hospital was only 52.61 in 1,000, or 5.26 per cent. of the total treated.
St. Luke's Hospital	180	864	1,027	611	416	390	637	39	98	137	133.40	13.34	There are now 55 "charity beds" in St Luke's Hospital. The greatest number of patients under care at one time was 172. The total expenses during the year amounted to $13,156, or a little more than $40 for each patient.
St. Vicent's Hospital	150	746	832	413	419	92	740	10	77	87	104.56	10.45	This excellent institution is under the care of the Sisters of Charity. It receives a great amount of chronic disease.
Mount Sinai Hospital	100	549	593	437	156	44	549	5	40	45	75.88	7.59	The daily average of patients was 55 There were 71 consumptives and 92 casualty cases.
Women's Hospital	75	......	189	......	189	126	63	....	1	1	5.29	0.52	This institution was removed to its new edifice on East 49th st. November 1st, 1867. It does not now limit its service exclusively to the care of vesico vaginal fistula.
Nursery and Child's Hosp. (E. 51st st.)	228	572	335	109	226	552	20	110	2	112	334.32	33.43	The discrepancy between the number "admitted" and the number who "received care," is explained by the fact that the former includes mother who came with their children, while the latter refers only to children The nativity column agrees with the number "admitted." The death-rate is calculated on the number who "received care."
Eye and Ear Infirmary	44	331	8,061	......	......	3,868	4,193	....	....	......	......	......	The columns of sexes could not be filled. No deaths occurred.
Bloomingdale Lunatic Asylum	......	144	312	153	159	......	......	....	....	28	89.74	8.97	During the year 123 patients were discharged, viz.: 58 recovered, 43 improved, and 22 not improved. Remaining December 31st, 161.
N. Y. Infir'y for Women and Children	12	137	137	9	128	46	91	1	....	1	7.30	.73	6,899 other patients received care by this most excellent institution, at their own homes, or at the Dispensary Office. See Dispensary Statistics on page —.

Vital Statistics of the Hospitals, etc.—Continued.

NAME OF THE INSTITUTION.	Present capacity. Number of beds.	Total admissions in the year.	Total number of cases that received care in the Institution.	Males.	Females.	Native born.	Foreign born.	Deaths—Native born.	Deaths—Foreign born.	Total deaths.	Death-rate per 1,000.	Percent. of mortality on total.	REMARKS.
Asylum for Lying-in Women........	30	109	395	......	395	17	378	....	3	8	27.52	2.75	The number of the out-patients was 269; foreign, 258; native-born, 11. Of 126 in-patients, 120 were foreign, and 6 native-born. The death rate is calculated on the number "admitted."
St. Franciscus Hospital	111	592	592	384	208	12	580	1	87	88	148.65	14.87	The religious sisterhood of St. Franciscus founded and have the management of this hospital. It provides for a very needy class
Totals	2,230	11,509	21,522	7,816	5,645	8,052	13,175	433	852	1,313	114.95	11.49	
*Hospitals and other Institutions on Blackwell's Island.**													
Almshouse	1,170	2,759	4,033	1,954	2,079	361	3,672	22	87	109	27.02	2.70	This death-rate (27 in 1,000) is a little below the actual rate, as some patients are transferred from the Almshouse to Charity Hospital.
Penitentiary........................	736	1,731	2,315	1,720	595	917	1,398	1	4	5	2.16	.22	
Charity Hospital....................	1,025	6,210	7,095	3,401	3,694	1,751	5,314	140	365	505	71.18	7.12	Syphilitic patients are transferred and treated in Charity Hospital, and they constitute a large and unfortunate element there.
Small-Pox Hospital.................	100	192	200	88	112	22	178	4	13	17	85.00	8.50	
Fever Hospital.......................	50	318	320	169	151	124	196	15	40	55	171.88	17.19	This hospital receives all the Typhus and Typhoid Fever patients provided for by public charity.
Incurable Hospital..................	120	209	209	122	87	11	198	4	15	19	90.91	9.09	
Lunatic Asylum	979	674	1,436	555	881	303	1,133	27	95	122	84.96	8.50	
Blind Asylum.	92	37	37	14	23	8	29	1	3	4	108.11	10.81	
Infants' Hospital....................	......	768	997	530	467	......	......	....	....	443	444.33	44.43	Temporarily removed to Ward's Island. This return is made for six months only, from July 1st, 1867, to January 1st, 1868, Of the deaths, 213 were boys, and 200 girls. The number discharged during the six months was 247; the number remaining at the close of the year 307.
Totals.......................	4,272	12,888	16,642	8,553	8,089	3,497	12,148	214	622	1,279	76.85	7.68	
Nursery and Nursery Hospital on Randall's Island.													
Nursery Department	552	1,284	2,033	1,360	673	1,776	257	....	1	1	.48	.05	There were 261 children indentured during the year, and 1,003 were returned to relatives.
Nursery Hospital	342	963	1,134	714	420	894	240	42	14	56	49.38	4.94	The Idiot Asylum connected with the Hospital has 63 inmates—40 being in the school.
Totals.......................	874	2,247	3,167	2,074	1,093	2,670	497	42	15	57	18.00	1.80	

Hospitals and other Institutions, Ward's Island.												
N. Y. S. Emigrant Hospital..........	852	6,341	6,341	3,853	2,488	......	......	130	461	591	93.20	9.32	The infant deaths, and all other deaths which occurred in the Refuge, are counted in the general death-rate as hospital patients
Emigrant Refuge	2,800	11,482	......	......	......	......	......	....	....	......	......	......	For convenience we give in this place the totals of the Hospital Department. There were 2,110 patients received directly from ship-board or within a few days after landing at Castle Garden.
Totals	3,652	17,823	6,341	3,853	2,488	......	......	130	461	591	33.10	3.31	
Dispensaries.†													
New York Dispensary.............	......	......	36,049	16,823	19,226	......	......	....	....	101	2.77	.27	This Dispensary was founded in 1790, and has provided medical care and medicines for 1,362,273 patients, and given vaccination to 126,329
Northern Dispensary.............	......	......	21,299	8,801	12,498	8,545	12,754	....	....	98	4.00	.46	Was founded in 1827. It provided care for 3,772 patients in their own homes during the year.
Eastern Dispensary.............	......	......	28,204	12,528	15,766	14,517	13,747	69	69	138	4.87	.48	Was founded in 1832. It sends a less number to the hospitals than the first-named (N. Y.), and consequently shows a higher death-rate.
Demilt Dispensary.............	......	......	27,489	11,243	16,216	13,593	13,896	....	....	118	4.29	.42	Was founded in 1851. Provided for 4,796 at home. Vaccinated 1,321 last year.
North-western Dispensary..........	......	......	10,380	4,348	6,032	3,149	7,231	....	....	48	4.02	.46	Was founded in 1852. In 1866, provided for 1,923 at home, and 10,035 at the office. Vaccinated 148 in 1866.
North-eastern Dispensary..........	......	......	5,280	2,441	2,839	2,917	2,363	23	20	43	8 14	.81	Was founded in 1862. Was removed from East 51st street to East 59th street. Its service now extends to Harlem.
German Dispensary..............	8	65	12,554	6,179	6,375	4,227	8,327	....	3	3	46.15	4.61	Death-rate calculated on the number of admissions to the Dispensary-hospital ward. The germ of the New German Hospital, now building, was planted here.
Bellevue Out-Door Department......	......	......	4,353	2,065	2,288	1,646	2,707	2	....	2	....	......	
Manhattan Dispensary.............	......	......	473	208	265	156	317	9	6	15	31.71	3.17	Most of these patients were attended at their homes. It needs Infirmary and Casualty wards.
N. Y. Homœopathic Dispensary	......	......	11,073	4,123	6,950	6,587	4,486	30	13	43	3.88	.38	The Homœopathic Dispensaries offer the services of their particular methods of treatment in the same manner as the incorporated Dispensaries.
N. Y. Homœopathic College........	......	.... .	1,832	411	1,421	902	930	9	12	21	11.46	1.15	
N. Y. Orthopœdic Dispensary.......	......	70	70	38	32	34	30	....	2	2	28.57	2.86	This institution deals so largely with scrofulous children that its death-rate will be high Even measles proves very fatal in such patients. This infirmary promises beneficent results.
Infirmary for Women and Children (Dispensary Department)..........	......	......	6,899	......	......	3,157	3,197	....	....	......	....	.....	Of this number, 545 were treated at their own homes; nativities and sexes not stated.
Mt. Sinai Hospital (Out-Patient Department)	......	......	619	373	246	189	430	....	....	......	....	......	
Totals.........................	8	135	166,574	69,581	90,184	59,649	70,421	142	125	632	....	......	Dispensary death-rates are kept down by numerous transfers to Hospitals.

* The Island Workhouse provided for 16.135 persons, committed during the year for vagrancy and disorderly conduct It has an average of 1,200 inmates, 66 per cent of whom are foreign, and 31 per cent native born Only 57 of the inmates died on the island during the year. We do not include this vagrant penal class in the above table.

† The following institutions have reported their statistics for the year, as follows: "The "N Y. Ophthalmic Hospital," 1,220 patients treated; "Bond street Homœopathic Dispensary," 26,046; "Hoffman Dispensary," 1,487 patients. The "Home for Incurables" (located at West Farms, Westchester county), has provided excellent care for 33 patients and has reported only four deaths in this its first year.

Vital Statistics of the Hospitals, etc.—Continued.

NAME OF THE INSTITUTION.	Present capacity. Number of beds	Total admissions in the year.	Total number of cases that received care in the Institution.	Males.	Females.	Native born.	Foreign born.	Deaths—Native born.	Deaths—Foreign born.	Total deaths.	Death-rate per 1,000.	Percent. of mortality on total.	REMARKS.
Reformatory Institutions.													
House of the Good Shepherd........	501	297	501	......	......	198	99	....	5	5	9.98	.99	The whole number received into the Institution since October, 1857, was 1,552. The Sisters of the Good Shepherd number 70; the Magdalens 431, for the year 1867. The nativity columns are divided for the number of admissions. The death-rate is calculated upon the total of 501. During the ten years this institution has been in existence, 955 Magdalens have been returned to their families; 190 provided with situations; 25 have died, while only 65 have been dismissed for bad conduct. On January 1, 1868, there were 317 in the institution.
House of Protection (Inst. of Mercy)	100	357	2,845	......	......	83	274	....	....	......	....	......	
House of Mercy....................	46	66	112	......	112	92	20	2	1	3	26.78	2.68	This was founded by the efforts of the late Mrs. Richmond, for the rescue of prostitutes.
Home for the Friendless...........	143	573	4,000	102	471	322	2	8	....	8	13.96	1.39	The number of out-door poor (3,427) who received care from the institution is included in the total. There were 263 cases of sickness and 8 deaths; the average age of the decedents being 5 months and 8 days The death-rate is calculated on the total population of the institution. The nativity column includes only the children who received care; and the death-rate, if calculated upon the infant population alone, amounts to 23.95 in 1,000, or 2.40 per cent.
Asylum for Reformation of Juvenile Delinquents......................	613	922	1,467	1,231	233	1,329	138	1	....	1	.67	.07	The only death in this institution was caused by an accidental fall.
Women's Aid Society.............	......	151	151	......	151	......	......	....	....	......	....	......	This has been only one year in operation. It attempts the same work as Mrs. Richmond's House of Mercy, but admits a destitute class, not abandoned.
N. Y. House of Refuge.............	1,000	804	1,775	1,220	550	83	721	2	1	3	1.69	.17	Of the number received in this institution, 101 were provided with situations and 5 restored to their families; 27 remained January 1st, 1868.
Five Points House of Industry	194	1,082	1,000	......	......	......	......	9	....	9	9.00	.90	In this house the hungry are fed and the filthy made clean. Its sanitary success is like its moral results. See first Board of Health Report, page 156.
Totals........................	2,597	4,252	11,857	2,556	1,517	2,107	1,254	22	7	29	2.44	.24	

Other Humane Institutions.													
N. Y. Orphan Asylum	250	34	217	115	102	211	6	4	....	4	18.43	1.84	
Roman Catholic Orphan Asylum	900	168	962	571	391	......	......	....	....	8	8.31	.83	Including Male Department in Fifth avenue, and Female Department in Prince street.
Orphan's Home and Asylum	160	34	192	64	94	152	6	1	....	1	5.20	.52	The columns of sex and nativity agree with each other, but they do not agree with the number who "received care." The discrepancy amounts to 34, which is the number admitted and discharged during the year. The number remaining at the close of 1867 was, therefore, the same as at the beginning of the year, viz., 158.
St. Joseph's Asylum	180	39	220	118	102	188	32	3	1	4	18.18	1.82	
Protestant Half-Orphan Asylum	129	91	310	163	147	80	230	2	....	2	6.45	.61	
Hebrew Orphan Asylum	200	51	147	110	37	119	28	....	1	1	6.73	.67	
Leake and Watts Orphan House	250	2	93	57	36	93	......	2	....	2	21.50	2.15	Supported exclusively by a fund left by Messrs. Leake and Watts. The Board of Trustees were compelled to curtail the admissions during the year, because of the increased cost of supplies.
Howard Mission	......	1,533	7,581	......	......	......	......	3	....	......	......	......	No other statistics could be had from this institution
Home for the Respectable Aged and Indigent Females	79	11	79	......	79	50	29	3	5	8	101.26	10.13	
Methodist Asylum for Aged and Infirm	65	70	70	.....	......	54	16	2	1	4	57.14	5.71	
Colored Home	300	510	744	243	267	495	15	88	6	94	126.34	12.63	This noble charity—now in its twenty-eighth year—consists of a "Home" and a Hospital. It humanely provides for a class of very needy invalids.
N. Y. Institution for the Blind	190	32	200	75	125	173	27	1	....	1	5 00	.50	
Totals	2,703	2,575	10,815	1,516	1,380	1,615	389	107	14	129	11.92	1.19	

NOTE.—The New York Society for the Relief of the Ruptured and Crippled, is located at No. 97 Second avenue. It was organized in May, 1863, under the auspices of the Association for Improving the Condition of the Poor. During the first four years of its humane work it has afforded gratuitous relief to 4,966 persons, and of this number 1,769 were sufferers from hernia, and 1,526 others were children that required orthopædic treatment. It is a most useful and economical charity. It reports no deaths, though it has a number of wards well occupied.

Vital Statistics of the Hospitals and other Benevolent Institutions of the City of Brooklyn and County of Kings.

[Reported by Dr. R. C. STILES, Deputy Registrar.]

NAME OF INSTITUTION.	Total population of do. in the year 1866.	Total population of do. in the year 1867.	Total deaths in 1866.	Total deaths in 1867.	Average number of inmates daily in 1867.	Total number of inmates, native-born, in 1867.	Total number of inmates, foreign-born, in 1866.	Death-rate per 1,000 in 1866.	Death-rate per 1,000 in 1867.
Kings County Hospital	3,161	2,828	366	318	336	896	2,710	115.8	112.4
Kings County Asylum	675	701	65	52	493	170	321	96.3	74.1
Kings County Almshouse	3,217	2,942	59	35	500	....	....	18.3	11.9
Kings County Nursery	1,636	994	38	31	449	896	132	36.7	31.2
Kings County Penitentiary	941	741	68	5	200	298	622	72.2	6.7
Brooklyn City Hospital	1,571	1,396	92	85	140	496	1,060	58.5	60.9
Long Island College Hospital	223	237	23	29	25	60	174	103.1	105.5
St. Peter's Hospital	175	325	20	32	50	12	150	114.3	98.5
Juvenile House of Industry	137	130	1	3	85	123	4	7.3	23.0
Home for Destitute Children	....	239	....	25	120	....	....	....	104.6

Statistics of the Brooklyn Dispensaries for the Years 1866 and 1867.

1866. — NAME OF INSTITUTION.	Total number that received treatment.	Males.	Females.	Native-born.	Foreign-born.	1867. — NAME OF INSTITUTION.	Total number that received treatment.	Males.	Females.	Native-born.	Foreign-born.	Av'ge number treated daily.
Brooklyn Dispensary	5,142	2,120	3,022	3,067	2,075	Brooklyn Dispensary	6,046	2,425	3,621	2,805	3,241	20
Brooklyn Central Dispensary	4,000	......	......	......	......	Brooklyn Central Dispensary	4,835	......	......	......	......	16
Williamsburgh Dispensary	6,105	2,341	3,764	3,134	2,971	Williamsburgh Dispensary	6,145	2,433	3,712	3,632	2,513	20
Brooklyn Homœopathic Dispensary	5,962	......	......	......	......	Brooklyn Homœopathic Dispensary	6,798	......	......	......	......	21
Gates Av. Homœopathic Dispensary	......	......	......	......	......	Gates Av. Homœopathic Dispensary	1,592	......	......	983	609	13
Long Island Coll. Hosp. Dispensary	6,000*	......	......	......	......	Long Island Coll. Hosp. Dispensary	7,000*	......	......	......	......	23
Total	27,209	4,461	6,786	6,201	5,046	Total	32,416	4,858	7,333	7,420	6,363	113

* Other statistics not obtained.

The Vital Statistics and the humane purposes of the seventy-five hospitals and other institutions which are presented in the foregoing summaries, sustain very important relations to the public health. They all are institutions of a civilization that has wrought into its very texture the humane and religious idea of good-will and charity among men. The physician regards them with just pride, as well as with emotions of solicitude that—better than words—explain the object we have in carefully gathering the records of this benevolent service in which sanitary science and social wants are conjointly studied; a service that applies with greater or less success, the practical lessons which are derived from such study.

The tabulated statistics which we have here presented merely show what has been the *movement* of these charities during the year 1867. The several columns in these tables, are sufficiently explained by their headings, but each institution has a special organization and history of its own, and therein are found the reasons for whatever results appear in the columns relating to the mortality of inmates. And we need to remark here, that the sanitary condition of a hospital is not to be estimated alone by the number that die in it, but rather by the course of curable diseases that are brought into it, and the circumstances of any zymotic disease which originates upon the hospital premises. This remark has apt illustrations in such models of sanitary administration as the hospitals of St. Luke and St. Vincent, which, being founded wholly upon the religious obligations of *mercy and medical care to the incurable as well as the curable*, necessarily exhibit death-rates that are at once explained by the fact we now mention.

Classification of Public Institutions.

In order to exhibit these records of medical and social charity in groups that will aid the reader who has occasion to consult them, we arrange them as follows, for New York:

1. Hospitals of New York, in the city proper.
2. Hospitals and the Pauper and Penal Institutions of Blackwell's Island.
3. Nursery Department and Hospital on Randall's Island.
4. Immigrant Hospitals and Refuge on Ward's Island.
5. The Medical Dispensaries of the city.
6. The Reformatory Houses of New York.
7. Various other Humane Institutions, having houses of residence and medical care.

THE HOSPITALS IN THE CITY.

The six general hospitals in the city have a total capacity equal to 1,841 beds. About 65 per cent. of this nominal capacity is constantly occupied, and during the winter season more than 75 per cent. is occupied. There were admitted to these six hospitals during the year 10,216 patients, which together with the 1,777 patients, that on the 1st of January, 1867, were remaining in the wards, make up an aggregate of 12,093 persons receiving medical and surgical care in them in the twelve months. The total mortality in these six hospitals amounted to 1,123. The mean death-rate was 92.88 per 1,000 patients, or 9.28 per cent. of all that received care. The returns being incomplete for numbers remaining January 1, 1868, we would remark, that this total scarcely varies from that of January 1, 1867, and therefore, that the death-rate here given is a correct one.

The New York Hospital.—This "*oasis*" in a region which the most massive warehouses of the metropolis have made a desert as regards a resident population, receives a greater number of seamen than in former years, for the hospital requirements of this class of the sick and wounded servants of commerce constantly increase with our commercial growth. The doors of this oldest and noblest of the hospitals, are always open for the reception of all kinds of casualty cases. Both these classes of patients give a high death-rate. But the average mortality of this hospital has been unusually low the past year, and the records of the surgical wards testify to such professional skill and sanitary care as have rarely been exceeded. Scrupulous care in removing and isolating whatever cases have manifested an infectious character, has proved of great advantage to the surgical wards. The removal of the medical department and all the surgical, *excepting the casualty wards*, to the high grounds north of the Central Park, can only be a question of time and prudence, for the cardinal policy of its governors has always been to do gladly whatever can be done *to save the greatest number of lives.*

Bellevue Hospital.—This great refuge of the sick poor and of street and factory casualties, presents results which prove how greatly its hygienic management has been improved by strict sanitary regulations in the care of its wards. But, like the old *Hotel-Dieu*, to which it answers in its humane purposes, this hospital is so crowded and populous that it frequently suffers the unhygienic consequences of ward-crowding and general excess of population upon the hospital grounds. In addition to its enormous casualty list, it receives a vast quantity of broken-down, chronically diseased and consumptive patients; this last named cause alone giving one hundred and forty-six deaths in the last year.

St. Luke's Hospital.—This excellent institution, now in its tenth year of beneficent service, has provided for more than 5,000 patients in the whole term, and for more than 1,000 last year. It has about 140 beds constantly occupied. Though it is managed, and was built, by the Episcopal Churches, this hospital, true to the humane spirit of its beloved founder and pastor-superintendent, Rev. Dr. Muhlenberg, "welcomes every proper applicant whom Providence sends to its door." Its nursing and internal administration are managed by an evangelical sisterhood, which is an American example of the pious duties that the deaconesses of Kaisserswerth, in Europe, so successfully organized under the guidance of Pastor Fliedner. There is an orthopœdic child-ward, at St. Luke's, in which 147 patients were treated last year. Consumptives and chronically diseased sufferers are received in such numbers, that the average death-rate is kept up to about twice the mean rate at which its acutely diseased patients die.

Hospitals St. Vincent, Mt. Sinai, and St. Franciscus.—Each of these institutions strives to supply to its inmates all the skillful nursing and generous care which the obligations of religious benevolence can suggest. They are respectively located in the midst of dense populations, and to their misfortune, though scarcely to the detriment of their humane service, in the very places where they are situated, the districts surrounding the two last named institutions are insalubrious in consequence of original and acquired peculiarities. They need and must have better hygienic surroundings.

The six other hospitals and infirmaries, that are mentioned in the summary of City Charities, are favorably located for the service they respectively offer for the classes of disease that receive care in them. But, as regards the Lunatic Hospital at Bloomingdale, it should be remarked that the Governors have, with wise forethought, recently made arrangements for the timely removal of that important institution to the town of White Plains, some twenty-one miles distant from the present site, in consequence of the rapid encroachments of the city upon the quiet neighborhood of Bloomingdale. Concerning the sanitary wants of the old site, Dr. D. Tilden Brown, the intelligent medical officer and superintendent states a fact which we have ascertained to be applicable and very important to most of the public institutions near the Central Park, viz: that "there are such numerous and rapidly multiplied obstructions to the natural water-courses, by roadways, and by tenants of properties, vegetable gardeners, etc., that the surface-water is prevented from flowing off freely." Dr. Brown further states a fact to which all sanitary observers in that region bear witness, that "there needs to be a thorough examination into the matter of surface-drainage all along the Bloomingdale district." Such external circumstances are scarcely less important than matters of internal sanitary care in regard to all hospitals and asylums.

PAUPER AND PENAL INSTITUTIONS ON BLACKWELL'S ISLAND.

The 12,888 admissions and the nearly 5,000 constant inmates of these institutions have, in the past two years, given some of the most conclusive results which have ever been contributed to sanitary science by a similar population. By referring to the map which faces page 275 of this report, the statistics of the cholera epidemic of 1866 in these institutions can be read, and if the reader can refer to our report of that year, the fact will be clearly seen that the sanitary management of such masses of pauperized and damaged life is worthy of all that skillful and conscientious care which has so distinguished the Commissioners of Public Charities and their chief medical advisers. The statistical summary for the nine branches of these great social charities give a correct view of the sanitary results actually reached on "*the Island*" in the year 1867. The saving of life that has been witnessed in the Almshouse, the Charity Hospital and the crowded Lunatic Asylum is worthy of remark. But the most instructive of all hygienic lessons has been taught in the infant department, where, in a few months' experience—which yet goes on—it has been proved that the standard of mortality which for years has prevailed among the spoon-fed infants is now *reduced seventy per cent.*, by substituting *breast-milk* for the former unnatural system of nourishment. To the interests of infant-life in the city, wherever the first duty of maternity has become unfashionable, the result of this experiment with foundlings is full of important instruction.*

Randall's Island institutions being a special branch of the city charities, requires no separate notice.

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* In the sanitary care of the vast assemblages of sick, pauperized, and vicious persons that fill the institutions of Charity and Correction under the Commissioners, the *diet* of the

Immigrant Institutions—Ward's Island.

The State Hospital and Refuge added 591 deaths to the aggregate of mortality in New York. The care which the Commissioners of Emigration gave to the nearly 18,000 needy emigrants that they placed there in the course of the year, probably saved the population of the city proper from a still greater number of deaths, that would have resulted from the unguarded presence of that unhealthy mass of emigrants in the city lodging-houses. At the time this note is being written there are nearly 2,900 inmates in these two great institutions. There were 579 infants born in the lying-in department of the Refuge. This unfortunate class of illegitimates loses heavily by death; 239, or more than forty-one per cent., having died during the year. Yet this is less than half

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inmates has, fortunately, received special attention the past year. The Commissioners of Charities having requested the Medical Boards at the several institutions to revise the diet tables, so as to conform to the best hygienic standards, the duty was given into the hands of competent committees, who called to their assistance the expert physiologist, Prof. Austin Flint, Jr., and before midsummer their final reports were submitted to the Commission, and at once were adopted. The beneficial results of the reformed dietary soon became obvious, and we are warranted in the belief that the diminished death-rate in those institutions, which we have found to be a source of congratulation every week in the last five months of the year, was mainly brought about by the new dietary.

The statistical facts may be concisely stated as follows: In the year 1866, there was a total population amounting to 38,636 in the hospitals and other institutions under the care of the Commissioners of Charities and Corrections, inclusive of the 13,670 inmates of the workhouse. Cholera killed 428 in those institutions, and other causes destroyed 3,140 lives. But, in the year 1867, there were only 2,492 deaths by all causes in the whole group of those institutions, though the total number of inmates amounted to 43,169, or to 4,533 more persons than received care the previous year. The death-rates for the two years read as follows:

	In Year 1866.		In year 1867.	
Death-rate in Total Group of the Institutions (not including Cholera deaths in 1866),	81.2 in 1,000.	8.12 per cent.	57.7 in 1,000.	5.77 per cent.
Death-rate in the Total (*exclusive of Work-house*) each year,	121.8 per 1,000.	12.18 per cent.	92.1 in 1,000.	9.21 per cent.

The work-house statistics need to be excluded as above, because no change has been ordered in the work-house diet table. The last schedule in the above table correctly presents the death-rates of the institutions in which the improved diet has been adopted.

Whatever other hygienic causes have co-operated to reduce the death-rates in the hospitals and asylums here mentioned, there is no kind of doubt that the improved diet is the chief cause. It is a marvellously instructive result; and, until we had ascertained the nature and extent of this reform, we were utterly unable to explain the steady decrease in the rate of mortality in those institutions. This gain in the economy of life is also a gain in financial economy; for the average period of hospital residence will be found to be far less than formerly. The Bellevue Medical Board concisely epitomizes the results of this reform as follows:

‘‘The present dietary of this hospital may be regarded as representing the latest deductions of science, and the results of experience in regard to the alimentation of the sick. The beneficial effects of this improved diet is apprrent to every medical attendant, in *a more rapid convalescence* than formerly of that *large class of patients who have hitherto suffered from a species of chronic inanition.* The advantages will be a reduced mortality, a diminution in the amount of expensive drugs and stimulants, and a shorter residence in the hospitals.’’

the death-rate that has prevailed, until a few months ago, in the foundling and dry-nursery wards on Blackwell's Island. *The general death-rate* in the Hospital Department on Ward's Island, has greatly decreased since its new pavilions have been occupied. Their cost is being rapidly repaid in valuable lives saved.

THE MEDICAL DISPENSARIES OF NEW YORK.

This class of the city charities probably has no parallel in any country. It is as free and generous as the Belgian system, and is far less restrained and dilatory than the systems of Paris, Berlin, London, and Liverpool. The 162,311 cases of disease which were treated in these dispensaries last year, represent at least 35,000 families and more than 100,000 persons. Indeed, the eight more important of these thirteen institutions seldom enter any patient's name the second time in one year for the same disease.

The number of deaths reported by the Dispensary physicians amounted to 630. The total number of patients sent to hospitals by them, exceed the number that died at home. As nearly as we are able to ascertain there were about 125,000 different persons treated or sent to hospitals by the Dispensary physicians, and of that number about 1,000 died at home and in hospital. In view of the timely and intelligent medical care given by these institutions, it is due to them to mention and regard them as constituting an indispensable branch of public sanitary service.

New York Infirmary for Woman and Children.—This well-organized medical charity is conducted by thoroughly-educated female physicians, and is one of the most useful medical and sanitary institutions in the city. Its dispensary or out-door department has adopted methods of sanitary instructions and effort in the houses of the sick poor that should be imitated by all the dispensaries.*

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* It is conducted in the following manner:

"A certain number of persons applying to the Dispensary for medical advice, are called on at their homes by the visitor, who, entering into conversation with the mother or father, ascertains the various facts relating to the physical condition of the family. When there are children in the family, it is entered on the record for continued oversight and instruction in hygienic matters. In successive calls, the visitor brings up the subjects of ventilation, cleanliness, warmth, food, clothing, etc., making practical suggestions as they seem to be needed in each case. She has sometimes taught them how to cook their food, or to choose it with economy, or to vary it sufficiently; sometimes the lesson has been in airing their bedding, or opening windows without drafts, or using such means of improvement as they possess to the best advantage. Nuisance found on the premises have been reported to the proper authorities and speedily removed. 5,000 copies of an excellent little tract on fresh air were reprinted for distribution; this tract has often been read aloud in families where no one could read. Employment has often been found for those who needed it, for though the work is educational rather than benevolent, pressing physical wants must often be supplied before any improvement can be attempted."—*Fourteenth Annual Report of the Infirmary Dispensary.*

Medical Charities in Richmond County, Staten Island.

The Seamen's Retreat.—Organized in the year 1834, under a charter and special law of the State, which ordered the creation of a Seamen's Hospital, this institution has proved to be one of the most useful and indispensable of medical institutions. Its sanitary condition has continued to be unusually good throughout the past year. The wards of this hospital are afflicted with certain inherent hygenic *defects of plan and construction*, which tend to nurture any infectious fever-poison that gains a lodgment in them. This sad fault in the original ward-plan has cost the lives of three medical officers, and a much greater number of sailors, who have died of typhus there since 1851. Its location upon the bayside in the village of Edgewater, by the Upper Quarantine anchorage, favors its original design for receiving sick and wounded seamen directly from shipboard. It occupies nearly forty acres of elevated grounds.

Tne total number of seamen admitted in 1867 was 1,354, which, with the 125 remaining in the wards at the close of the previous year, makes an aggregate of 1,479 patients that received care in the year. The number of foreign seamen was 1,147. There were eighty deaths in the year. About eleven per cent of the patients, year after year, are surgical cases, many of this class being of a severe and necessarily fatal character.

The fact that this Hospital is wholly sustained by a special tax imposed by the State, while the general government collects, through the Custom House in New York, upwards of 34,000, and expends only half that sum upon seaman in the Metropolitan District, warrants the hope that some plan will soon be devised by which the excellent care of the Retreat may be extended to every sick seaman who cannot be provided for in the city hospitals. This is an important sanitary question, as the reader may see by referring to the facts we stated on pages 296,297 in the body of this Report.

The number of seamen constantly sick and requiring hospital care in the port of New York exceeds two hundred and fifty. The large share which the Retreat has taken in this humane service from the commencement of its work in 1834 until now, is shown in the following summary of its records the past year, and for the entire period of its history, thirty-four years :

In the year 1867.

Total No. that Received Care.	Discharged Cured.	Discharged Relieved	Discharged by Request.	Died.	Death-rate per 1000.	Per Cent of Deaths.
1,223	879	89	72	51	41.78	4.18

In the Thirty-four Years from 1834 *to* 1868.

55,828	44,978	4,734	1,607	2,778	47.98	4.8

Such success as these statistics indicate may justly awaken inquiry as to the sanitary advantages of rural hospital sites. And, in view of these great advantages to life at this excellent institution, the question naturally arises, "Why should the National Treasury any longer neglect to share in the support of the Retreat?" The Seamen's Hospital Fund in the National Treasury, receives annually twice as much money from seamen in the port of New York, as it expends for seamen in the Metropolitan District. We mention this subject because it demands attention as a very important sanitary question, since the Quarantine hospitals have ceased to offer adequate accommodation for seamen.

The Sailors' Snug Harbor.—This institution was founded by Captain Robert R. Randall, of New York, who left, by his will, in the year 1801, a large portion of his estate to found and forever support "an Asylum and Marine Hospital, to be called the *Sailors' Snug Harbor*, for the purpose of maintaining and supporting aged, decrepit and worn-out sailors." Captain Randall's original donation of land comprised some twenty-one and one-quarter acres lying upon the southern border of what is now East Tenth street, and extending to Waverly Place. This ground now yields an immense revenue by leases. The site of the "Snug Harbor" was selected and the edifices were commenced in 1831. The premises comprise one hundred and fifty acres on the North shore, Staten Island. The locality is salubrious. The average population is four hundred and twenty. There is a spacious hospital connected with the establishment, and it contains an average of forty invalids. The death-rate in the wards and in the whole establishment is high, for it is a community of "broken-down and worn-out sailors." The total number of deaths in 1867 was 31. Total number of inmates exclusive of employés, 426. Death-rate, 72.7 per 1,000, or 7.27 per cent. of total population; consumption, heart and kidney diseases, syphilitic dyscrasia of all kinds, and rheumatic diseases hasten the old sailor to the grave. Like the "Seamen's Retreat," the "Snug Harbor" relieves the city of a great quantity of homeless and destitute invalids, and diminishes the total list of deaths for the city. Like the sick seamen in the city institutions and the sailor boarding houses, these invalids of the mercantile marine furnish overwhelming testimony to the necessity for great and radical improvement in the sanitary care and provisions of the forecastle. Commerce and society at large loses much by the existing neglect of this duty.

The S. R. Smith Infirmary.—This is a *village hospital*, probably the first one in the United States. It is the offspring of religious charity and medical benevolence. Its full organization dates from the 20th of June, 1863. It has fifteen beds, a portion of which are supported by endowment or by churches. As a model of beneficent work and of pre-eminent success in the medical and surgical results of treatment, this excellent charity is an example that should find many imitators. Until the present time it has occupied one of the pavilions upon the western margin of the old quarantine grounds, Tompkinsville (Edgewater). Its medical service is given gratuitously, by selection or rotation, by the members of the Richmond County Medical Society.

Total number of patients under care in the Infirmary in 1867	69
Discharged cured	44 (73 per cent.)
Relieved	10
Died	5 (7.24 per cent.)
Remaining	10

About twenty per cent of the patients are surgical, and the others (eighty per cent.), are mainly sufferers by acute forms of disease. The daily cost per patient averages $1.75. Vaccination is offered gratuitously to all who apply, once each week, at a stated day and hour.

The Floating Hospital, Quarantine.—This institution dates its existence from July 5th, 1859. The hospital-ship *Falcon* was a disabled steamship, capacity nearly 900 tons, 7 feet between decks and 210 feet in length, "over all;" 28 feet average width, with one main-deck ward, 150 feet in length, and with a top-house structure divided into smaller wards, offices, &c., and having ample side windows, and also having ridge ventilation by a continuous double series of window transoms, which open and close by pulleys. Two immense air-shafts, with valves, &c., extend from windsail faces, on the hurricane deck, through the decks to the very keelson of the ship. The sides of the ship, against the main wards, are cut by numerous window ports that extend from floor to floor. This unparalleled provision for the ventilation and effectual flushing of the ship with fresh air, together with the apparatus for disinfecting by steam heat and by chemical agents, constitute the reasons for that entire immunity from every kind of infection and contagion that has been brought into the ship during the nine successive years it has been used as the Quarantine lazaretto.

This triumphant success of the very simplest sanitary safeguards against the contagium of cholera, the infectious fomites of yellow fever clothing, &c., as well as against small-pox and typhus, has been closely watched by the writer, under whose superintendence this test-experiment in marine hygiene was prepared, in 1859. The total number of patients treated on board the hospital ship to January 1st, 1868, is about 1,200. The following summary exhibits the leading points in the vital statistics of this hospital :

Number of Fever Patients admitted to Hospital Ship. Yellow Fever, including a few doubtful Cases.		Cholera Patients, including both the Collapsed and Re-acting Cases.		Per cent. of Deaths in Cholera	Per cent. of Deaths in Yellow Fever.
Total.	Deaths.	Total.	Deaths.		
315	78	837	259	30.94	24.76

By an Act of Congress the Secretary of War has turned over to the Quarantine Commissioners and Health Officer of New York the old transport steamships *Illinois* and *Empire City*, to be used for infected passengers and baggage when needed. But there is good reason to believe that the *artificial island* on the west bank of the channel, in the Lower Bay, will be successfully completed, and that a pavilion hospital for yellow fever and cholera will, before the end of the approaching summer, be so far perfected as to supersede, in a great measure, the further use of the wards of the hospital-ship. The island is now 500 feet in length, and 260 feet in width, and is an oblong hexagon in shape, with a sea-wall on all sides, nine feet above high-tide mark. It is nearly two miles off the Staten Island shore, and is nine miles south from the Whitehall or lower terminus of Broadway.

We have here presented the vital statistics of the seventy-nine public institutions in which *medical service is systematically given*, and in which it is either the chief or at least a very essential feature of the plan and purpose of the organization.

In the visits which the Registrar and Deputy Registrar have made to these institutions, and in all correspondence with them, there has been manifested a cordial spirit of co-operation with the Board of Health. Their directors earnestly desire to see the sanitary interests of these benevolent institutions promoted. In the original selection of sites for their buildings, as well as in the plans of construction of the edifices themselves, some of the institutions have not had sufficient regard to the sanitary topography and drainage of the grounds, or to that first and most indispensable requisite for health of body and mind, viz.: fresh air in abundance to every inmate. But in most of the institutions the advice of medical officers now predominates, and must, ere long, work out the needed sanitary improvements, both as respects ventilation and healthfulness of sites.

In regard to the sanitary condition and wants of the hospitals in the Metropolitan District, there is much reason for reiterating the two postulates upon which Florence Nightingale—"the good Providence of the modern hospital"—has founded the great reform in hospital hygiene. Indeed, it would be a public blessing if these same principles were effectually applied, both to the edifices and the general administration, purposes, and plans, of every kind of charitable or reformatory institutions, as well as in every hospital, for this is the only method of making a practical application of that far-reaching physiological law: "*Corpus sanare est animam salvare.*"

The principles here mentioned are concisely stated as follows:

1. The very first requirement of an hospital is that it should do the sick no harm.

2. The object sought in the construction of a hospital is the recovery of the largest number of patients to health in the shortest possible time, and that to this end everything else is only subsidiary.

E. HARRIS.

Appended Statement No. V.

Cholera at the Military Posts in the Harbor of New York During the Year 1867.

In the records of cholera-outbreaks at military posts and among soldiers *in transitu*, there is such a definiteness as to dates and circumstances of the first cases, as well as in regard to the history of all subsequent events in the progress of the epidemic, that this class of contributions to the vital statistics and epidmiology of the Metropolitan District is particularly valuable. The Surgeon-General of the United States Army has kindly ordered a summary of the records from the military posts in the harbor of New York to be furnished to the Board of Health to show in what manner and at what points within the island-fortifications near the city cholera gained foothold during the past summer and autumn.

In the subjoined summary by Lieutenant-Colonel J. J. Woodward, is a record of the sharp epidemic outbreak of cholera, which occurred on Governor's and Bedloe's Islands the last week in August (1867), and which killed 22 out of 45 soldiers whom it attacked, in commands that numbered at the time 1,200 men.

Surgeon-General's Office,
Washington City, *January* 11*th*, 1868.

Dr. E. Harris, *Corresponding Secretary and*
Registrar Metropolitan Board of Health:

Sir—In reply to your letter requesting a condensed summary of the facts with regard to Asiatic cholera and diarrhœal diseases at the military posts in New York harbor during 1867, the Surgeon-General has directed me to furnish you the following statement:

The posts at which cholera occurred were Fort Columbus, Governor's Island, and Fort Wood, Bedloe's Island.

At Fort Columbus there were thirty five (35) cases of cholera and eighteen (18) deaths, during August and September. The first case occurred August 21st, the last case September 10th. Brevet Brigadier-General J. B. Brown, Post Surgeon, makes the following statement with regard to the introduction of the disease:

"The first case occurred this summer on the 21st of August, as previously reported, in the person of recruit Louis Vassar, who arrived at this post the evening previous, with a detatchment of recruits direct from St. Louis, Mo. One man had died, *en route*, after a short illness, with symptoms similar to cholera. I have since learned that recruit Vassar, with another recruit, were in personal attendance upon the sick man. The other recruit went to Bedloe's Island, and is regarded by Lieutenant-Colonel Randolph, Post Surgeon at Fort Wood, as the individual who introduced the disease at that post, he having been attacked by cholera shortly after his arrival there.

"No additional cases occurred at this post until the 31st August—an interval of ten days—when, as previously reported, ten new cases were admitted to hospital, four of these cases occurring among men of a fresh detachment of recruits received here on the 28th August, three days previously. One of these men came from Philadelphia, two from Jersey City, and one from New York city. Four others of the ten were rejected recruits, who had been on this island, respectively, one month, twelve days, two weeks, and three weeks, but in daily and nightly contact with all newly-arriving recruits in the castle. The remaining two cases of these ten were general prisoners under confinement, also in the castle.

"The facts relative to the cases occurring, during the present month, appear in the accompanying special report. It will be seen that six only of these cases have occurred in persons who were not recent arrivals at this depot."

At Fort Wood there were ten (10) cases of cholera and four (4) deaths during August and September. The first case occurred August 25th, the last September 24th. Of these cases six were recruits, two belonged to the permanent party of the post, and two to the band.

Brevet Lieutenant-Colonel J. F. Randolph, Post Surgeon, in his report of the outbreak, gives substantially the same account of the disease as is contained in the report of Surgeon Brown, above quoted.

Appended are summary tables showing the monthly movement of cholera and diarrhœal diseases, compared with all other diseases (wounds and accidents excluded), at the above posts for the last six months of 1867.

I have the honor to be, very respectfully,
Your obedient servant, J. J. WOODWARD,
Asst. Surg. and Brevet Lieut.-Col. U. S. Army.

By order of the Surgeon-General.

Fort Columbus, Governor's Island, New York Harbor.

MONTHS.	JULY.		AUGUST.		SEPT.		OCT.		NOV.		DEC.		TOTAL.	
MEAN STRENGTH.	827		875		887		777		903		892		860	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cholera	....	....	11	5	24	13	....	....	....	....	....	....	35	18
Cholera Morbus	....	....	....	....	11	....	....	....	....	....	....	....	11	...
Acute Diarrhœa	169	....	156	....	259	....	45	....	12	....	21	....	662	...
Chronic Diarrhœa	....	....	....	....	....	....	....	....	1	....	....	....	1	...
Acute Dysentery	12	....	20	....	14	5	2	2	....	....	....	....	48	7
Chronic Dysentery	....	....	....	....	....	....	1	....	....	1	....	....	1	1
Total	181	....	187	5	308	18	48	2	13	1	21	....	758	26
All other Diseases	149	....	138	....	150	2	77	....	100	1	118	....	732	3
Aggregate	330	....	325	5	458	20	125	2	113	2	139	....	1490	29

Fort Wood, Bedloe's Island, New York Harbor.

MONTHS.	JULY.		AUGUST.		SEPT.		OCT.		NOV.		DEC.		TOTAL.	
MEAN STRENGTH.	409		292		337		305		382		360		347	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cholera	....	....	2	....	8	4	....	....	....	....	....	....	10	4
Cholera Morbus	....	....	....	....	....	....	....	....	....	....	....	....	....	...
Acute Diarrhœa	55	....	53	....	75	1	31	....	35	....	12	....	261	1
Chronic Diarrhœa	....	....	....	....	....	....	....	....	....	....	....	....	....	...
Acute Dysentery	6	1	1	1	6	....	4	....	7	....	5	....	29	2
Chronic Dysentery	....	....	....	...	....	....	1	....		....	....	....	1	...
Total	61	1	56	1	89	5	36	....	42	....	17	....	301	7
All other Diseases	58	3	46	....	47	...	39	....	61	....	54	....	305	3
Aggregate	119	4	102	1	136	5	75	....	103	....	71	....	606	10

The Medical Officers of the army have greatly promoted the practical knowledge of the doctrines and duties of hygienic regulations against cholera. The foregoing statement from the Medical Bureau, like that which was presented a year ago,* clearly sets forth the very convincing evidence that cholera-infection was introduced by recruits that arrived from places known to have been infected at the time. Last summer the soldiers who had nursed and buried a deceased comrade while *en route* for New York, from St. Louis—where cholera then prevailed—seem to be justly charged with introducing the infection. And by referring to our last year's report, it will be seen that a cholera nest that existed in the First Ward of the city, and near the military post, was justly accused of the fault, and that a certain soldier *in transitu* from Minnesota, by special exposure in the sickly district, became the first victim and carrier of the pestilence.

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* See Report of Metropolitan Board of Health for 1866 (1st Edition), pp. 297-300; Albany Edition, 572-579.

The local circumstances which appear to have favored the propagation of cholera on Governor's and Bedloe's Islands, in 1867, were essentially the same as those which existed at those posts and at Hart's Island the previous year. They were briefly these: 1st. The use of earth-pits or surface latrines at the outbreak of cholera. 2d. A porous, diluvial soil, underlaid at the depth of a few feet by an impervious rocky basin or bed; and 3d. The personal condition and habits of military recruits and prisoners.

The prompt arrest and sanitary control of the outbreak on those Islands, last summer, very forcibly illustrated the effectiveness of the "stamping out" method of arresting this relentless foe of the soldier. The most indispensable sanitary measures consisted in (1) the flooding with copperas and crude carbolic acid of all the latrines and cholera-defiled places and things; (2) the immediate sealing up and permanent disinfection of the latrines, and the construction of privy-closets beyond the sea-wall, over the tidal floods of the bay; (3) the official watch and medical care which, after the first group of cases, discovered and promptly treated every man who was attacked with any bowel disorder, however slight.

The fact that 2,051 cases of other diseases than cholera occurred at these two military posts during the six months, sufficiently proves that the soldier population there was not in a good condition to resist an epidemic. In the corresponding six months of 1866 only 1,789 cases of diseases, exclusive of 123 cases of cholera, occurred at the same posts, and in about the same average number of men.

The surgeons of the United States army who confronted cholera in 1832, 1834, 1849, and subsequently have strongly maintained the doctrine of its infectious and transportable nature. The military rules of surveillance, and daily record of all that concerns the soldier in camp and *in transitu*, furnished to the medical officers abundant evidence of the *fact* long before the *true explana-*

tion of cholera-infection was found. And now the circumstance is as noticeable as it is worthy of the Army Medical Bureau, that the official report of the Surgeon-General on the cholera in 1866 proves to be one of the most convincing and instructive *résumés* of statistical and historical evidence upon the truth and value of the doctrines and the methods which the Metropolitan Board of Health has enforced against cholera the past two summers. The following well-considered remarks concerning the part the army acted in spreading the infection of cholera in 1866 honestly gives the conclusions reached by army surgeons and the central Bureau in regard to this point. We quote from Colonel J. J. Woodward's report in the Surgeon-General's instructive *Circular No. 5*:

"The epidemic (in the army) appears from the record to have radiated directly from two chief centers.

"Originating in the overcrowded barracks of Governor's Island, New York harbor, in the immediate vicinity of an infected city (we would say, *a certain infected quarter in the city*), through which recruits passed with more or less delay before arrival, the infection spread by readily treaceable steps to Hart's Island; to Georgia; to Louisiana, by way of New Orleans; to Texas, by way of Galveston; to Louisville, Kentucky; to Richmond, Virgiana; and to La Virgin, Nicaraugua Bay. From Richmond it was carried to Norfolk, Virginia; from Louisville to Bowling Green, Kentucky. The probabilities appear to be that the disease was carried from New Orleans up the Mississippi river to various points on that stream, and west of it; and though the whole chain of evidence is not complete, yet there are a sufficient number of known cases of the transfer of the epidemic from one post to another in this region to put this view of the whole movement beyond reasonable doubt.

"The other principal center appears to have been Newport Barracks, Kentucky, where the disease was plainly introduced from the infected city of Cincinnati, on the opposite side of the Ohio river. Although it did not prevail to any great extent at this post, yet it is in evidence that it was carried thence to Augusta and Atlanta, Georgia, and to Nashville and Memphis, Tennessee."*

Such was the course pursued by cholera in 1866. The record of its destructive journeyings with moving detachments of soldiers the past twelve months teach, with greatly increased certainty and clearness, the same lessons that were taught in the previous year.

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* *Circular No.* 5. War Department, Surgeon-General's Office, May 4, 1867. *Report on Epidemic Cholera,* pp. 15 and 16.

The sanitary regulations which were enforced the past year in camps and in the moving bodies of troops prevented untold suffering and greatly restrained the epidemic movement of the pestilence. Sanitary authorities in American towns are under lasting obligations to the army medical officers for unceasing and intelligent efforts to prevent the spread of cholera and at the same time to record with careful accuracy and fulness whatever they observed in the progress of the pestilence, and in the results of sanitary measures against it. Their testimony has, in all parts of the United States, in a remarkable degree, confirmed the principles upon which the sanitary officers of the Metropolitan District have combated the incursions of this foe. And in numerous instances the army experience has seemed clearly to prove the correctness of M. Gendron's remark, that "*l'epidemie est l'effet et non la cause de la contagion.*" The epidemics last summer on Governor's and Bedloe's Islands certainly teach this doctrine, namely, that the *contagium* of cholera, when planted in a favorable soil, will produce an epidemic growth of it.

E. H.

BUREAU OF VITAL STATISTICS, }
NEW YORK, *February* 1, 1868. }

Appended Statement No. VI.

MEMORANDUM OF DISINFECTION.*

Fresh air and pure water, constant ventilation, and thorough cleansing, are natural means of preventing and destroying the causes of infection and disease. But there may be infected or foul places and things, and there are times of special necessity or sudden danger from the presence of infectious epidemic disease, which require the instant arrest or destruction of the infection and all its removable causes: this is disinfection. The clothing from persons with small-pox, scarlatina, or typhus, and even the air in the sick-rooms of such patients is infectious; and the sick with typhoid fever or cholera *discharge excremental matters which possess infective properties that should be immediately destroyed.*

In this memorandum the words infection and disinfection are employed just as they are understood, as referring to the preventable causes that are concerned in repropagating specific kinds of disease; these causes are:

First—The specific infectious property or contagious substance of any one of the pestilential disorders.

Second—The local impurities and moisture in the house and grounds where the outbreaks of disease have occurred or are liable to occur.

Third—The foul exhalations and atmospheric impurities which injure health, or help to propagate pestilential epidemics.

Experience has proved that it is possible, by certain chemical agencies (such as are described in sections 4, 5, 6 and 7 of this memorandum), wholly to destroy or prevent the operation of the specific infection or *contagium* of any disease; but to do this, it is necessary that precise rules should be observed in applying the disinfectants; and, as regards cholera and typhoid fever, it is especially important that the infective discharges from the sick should be disinfected *as soon as voided from the body*, and that whatever clothing or surfaces may have been soiled by such discharges should be disinfected as soon as practicable. The fact should also be borne in mind by all persons who have charge of infected things, that the infective property or virus of some diseases, and of cholera especially, is capable of rapid increase in filthy places and in a foul, damp atmosphere. Therefore, the cleansing and disinfection of such places should, if possible precede the arrival or outbreak of any such pestilence. Every unclean and damp place about dwelling-houses, warehouses, factories, places of assemblage, passenger vessels, railway depots and hotels, should be made and kept perfectly clean and dry. All drains, privies, and water closets, should be kept as clean as possible, and should be thoroughly purified before cholera comes into the neighborhood. Such cleansing and disinfection give the surest protection against pestilential epidemics.

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* This memorandum has been the chief guide in the work of disinfection within the Metropolitan District, since the month of May, 1866. This edition is revised and condensed.

DISINFECTANTS AND THEIR USES.

There are three important classes of disinfectants, each having specific uses as mentioned above. Some of these purifying agents accomplish only one object, others accomplish two or more objects; some may be advantageously combined; others are incompatible with each other, and must not be used together.

Class I. *Positive disinfectants that quickly destroy or completely restrain every contagious and infectious virus.*

This class comprises the caustic acids, the acid salts of metals (soluble oxide salts), such as sulphate of iron, sulphate of zinc, etc.; carbolic acid and cresylic acid, which not only destroy every communicable virus of disease, but also prevent those kinds of fermentation and decay that aid in propagating epidemics. Frost destroys some infections, but preserved many others, while boiling or high steam heat destroys all contagious matter. It will be observed that no one of these agents, singly, is applicable to everything and every place that may require disinfection.

Class II. *Antiseptics, comprising chemical agents that arrest or wholly prevent fermentation and decay.*

This is a large class, and embraces carbolic acid and most of the agents of the first class ; but not every antiseptic substance or gas (common salt or chlorine, for example), can absolutely prevent the fatal operation of epidemic infection.

CLASS III. *Deodorants, absorbant, etc., comprises all the chemicals that deodorize or destroy putrid exhalations, or that absorb moisture and gases: charcoal, quicklime and chlorine are good examples of this group.*

Each of these three classes, and each disinfecting agent, has its proper uses, and, as it is frequently important that these threefold means of disinfection should be applied at once to a given place or source of disease, the chemical properties of the several agents must be regarded. For example, it should be remembered that chlorine and the common alkaline compounds do not destroy the cholera infection; also, the fact that if permanganate salts, carbolic acid and chlorine be used together, or if the first two of them be mixed, they will simply destroy each other, and leave the infection undestroyed.

Volatile Disinfectants.—Carbolic acid on any surfaces from which it will evaporate, or from which it may be evaporated by steam-heat, and the sulphurous acid fumes, are example of disinfectants belonging both to the *first* and the *second* class. Bromine and nitrous acid have similar powers, but should be used only by medical officers.

Of the volatile deodorants in Class III, chlorine is the chief, and though useful for certain purposes in the other classes (I and II) if intensely concentrated, it is principally useful to destroy other gases and temporarily to arrest decay. It seems not to have power to destroy the infectious property of cholera, small-pox and the cattle-plague, while the vapor, as well as the strong solution of carbolic acid, seems to destroy, or at least arrest, the infectious activity of all of them.

§ 1. QUICKLIME.—To absorb moisture and putrid fluids, use fresh stone lime finely broken; sprinkle it on the place to be dried, and in damp rooms place a number of plates or pans filled with the lime powder; whithwash with pure lime, and not with kalsomine.

§ 2. CHARCOAL POWDER.—To absorb the putrid gases, the coal must be *dry and fresh*, and should be combind with *lime;* this compound is the *calx powder*, as sold in the shops.

§ 3. CHLORIDE OF LIME.—To give off *chlorine*, to destroy putrid effluvia and to stop putrefaction, use it as lime is used; and if in cellars or close rooms the *chlorine gas* is wanted, pour strong *vinegar* or diluted *sulphuric acid* upon plates of chloride of lime occasionally, and add more of the chloride.

§ 4. Sulphate of Iron (Copperas) and Carbolic Acid.—To disinfect privies, cess-pools, drains and sewers, and especially the vessels, grounds or places in which the discharges from the sick with cholera and diarrhœal diseases are evacuated. Dissolve eight or ten pounds of sulphate of iron in five gallons of water and add half a pint of fluid carbolic acid (if it can be had); stir or agitate it briskly, to make a complete solution. Use as follows:

To keep privies and water closets from becoming infected or offensive, pour a pint of this solution into every water-closet pan or privy seat morning and evening.

To disinfect masses of filth, privies, sewers or drains, gradually pour in the solution, hour by hour, until every part of the mass or foul surface has been thoroughly disinfected.

To disinfect the cholera discharges, let a small quantity of this solution be constantly kept in all vessels into which the discharges are voided from the body, and let every privy and place where the discharges are cast away be thoroughly saturated with the disinfecting solution. Wherever cholera is present in a house or neighborhood, and wherever persons are arriving from infected places, the daily use of this disinfecting fluid should be maintained. *Bed-pans and chamber-vessels* are disinfected with the strong solution, using a gill at a time, and emptying and thoroughly cleansing as soon as used by the patient.

§ 5. Permanganate of Potassa.—To be used in disinfecting clothing and towels from patients sick with cholera, scarlatina, typhus or typhoid fevers, during the night, or when such articles cannot be instantly boiled. Throw the soiled articles immediately into a tub of water into which there has been dissolved an ounce of the permanganate salt to every three gallons of water. Boil the clothing as soon as it is removed from this colored solution, or boil them in it.

The Weimar Conference recommends that sulphate of zinc should be used precisely as we use permanganate of Potassa. The zinc solutions need to be much stronger than those of the permanganate; use at least two ounces of *sulphate of zinc* to one gallon of water. It must be remembered that if any of these solutions are very strong they would destroy clothing. At the best, they are but temporary substitutes for disinfection by boiling.

[NOTE.—*Rules for Testing and Disinfection of Impure Drinking Water*—To test for organic impurities in drinking water, proceed as follows: *For testing.*—Make a solution of chemically pure permanganate of potassa, eight grains to one ounce of distilled water. Into a half-pint of the impure or suspected water, in a goblet or tumbler, put one drop of the red solution; if the red tint disappears from the glassful in half an hour, add more of the solution. For every drop that loses its color in the half-pint there will be found to be from one and a half to two grains of putrid organic matter in the gallon of water. *To disinfect.*—To purify such water, if it must be used, drop in the permanganate solution until a slightly perceptible red tint remains in the water. This very weak solution of permanganate is not unwholesome, but for common purposes and among the poor it is better to depend upon the thorough boiling of impure water, if such water must be used. The permanganate quickly tests the presence of organic impurities. It destroys them by instantly oxidizing or burning them.]

§ 6. CARBOLIC ACID (FLUID).—This may be diluted at the rate of from forty to one hundred parts of water to one of the fluid acid. Use this solution for the same purpose as copperas is used; also to sprinkle upon any kind of garbage or decaying matter, and on foul surfaces, or in drains. When used to disinfect clothing, carbolic acid of a pure quality should be thoroughly mixed with its own quantity of strong vinegar, and next be dissolved in two hundred times it own quantity of water before the clothing is immersed in it. This mixture with vinegar ensures such complete solution of the carbolic acid that the clothing will not be burned by undissolved drops of acid when disinfected in the carbolic water. This weak rolution (one part to two hundred) will not injure common clothing, but the acid must be of good quality and free from tarry matter. The clothing, etc., will long retain the offensive odor of the acid, except in articles that can be immediately washed out in a strong solution of soap or soda.

If it should be desirable to destroy certain articles and their infection together, without fire, then saturate them with the acid, or use it diluted in ten to thirty times its own quantity of water. The disinfecting and antiseptic power of good carbolic acid is so great that one part of it to one hundred parts of water is sufficient for ordinary disinfecting solutions. For ordinary purposes in disinfecting clothing, the zinc solution is preferable to that of carbolic acid.

For drains, sewers, foul heaps, stables, and privies, the cheap "dead oil" of coal-tar, or the crude carbolic acid, answers every purpose when freely applied. Coal-tar itself is available as a disinfectant or antiseptic paint for the walls of stables, privy-vaults, and drains. By mixing with sawdust or dry lime, coal-tar or crude carbolic acid may be used on foul grounds or heaps of refuse.

The carbolic and cresylic "acids" are derived from coal-tar. Chemically considered, they are *alcohols*, and not acids. In market they are called by the first name—carbolic acid—and are frequently much adulterated or very impure in consequence of the naphthaline and tarry matters that dissolve in this kind of alcohol. The impurities do not dissolve in water. Coal-tar and the "dead oil" of coal-tar derive their disinfecting power from the "carbolic acid," of which the tar contains two or three per cent., and the dead oil contains five to twelve per cent. The impurities and adulterations of the crude "acids" make it desirable for sanitary officers to know the *percentage of crystallizable acid* in the carbolic fluids or disinfecting powder they use. Crude carbolic acid, containing fifty per cent. its weight crystallizable, costs less than a dollar per gallon, and is a good disinfectant for grounds, drains, or the air of a foul place in which cholera or any pestilential disease exists. Dilute or thoroughly agitate the acid in forty to two hundred parts water, and completely saturate grounds, the surfaces, and foul things in the infected neighborhood. Streets, court-yards, drains, and sewers may be quickly and effectually disinfected in this manner. The sprinkling of streets and gutters with a cheap solution of the acid has proved very useful in damp, hot weather: Add sulphate of iron whenever it is practicable.

§ 7. Boiling or High-Steam Heat.—Whenever foul clothing and infected things can be boiled, or have a boiling heat steadily applied and kept up for an hour, this is one of the simplest and best modes of disinfection. But, until such high heat is actually applied to the infected things, some one of the disinfecting solutions must be used. A common steam tub (in a laundry, or elsewhere), with a tight cover, is a good disinfecting vat: but the temperature must be kept at boiling-point.

[Note.—The methods of disinfection which we have here described are preferred simply because they are effectual, safe, easily applied, and not expensive. They have been thoroughly tested, and are in accordance with the latest experience.]

PLACES THAT MUST BE DISINFECTED, AND WHAT DISINFECTANTS TO USE.

Water-closets, Privies, Close-stools, Bed-pans, etc.—Use either of the substances 4 or 6, as described in the numbered sections of the foregoing directions.

Cellars, Vaults, Stables, or any damp or offensive Places.—Use 1, 2, 3, 4, or 6, in any manner suited to the objects to be attained, as described in these directions.

NOTE.—The permanganate salts must not be used with the carbolic or coal-tar disinfectants. It is also best that chlorine and the chlorides should not be used at the same time or contact with the latter class of substances.

Sick-rooms, Bed-rooms, and Closets.—Ventilate and keep clean, and use substances described in sections 1, 2, or 3, according to directions.

To disinfect a Privy, or a quantity of Earth that is contaminated by Cholera-Excrement, or liable to be infected.—Use the mixed carbolic and copperas solution, saturated strength, as follows:

To every cubic foot of soil or filth give two or three pints of the strong solution.

To every privy and water-closet allow at the rate of one pint of this solution, to be poured in daily, at evening, for every four persons on the premises. This practice to be kept up while cholera is in the district or country.

[This method of systematic disinfection would be useful in every household; but when cholera is present in any city or country, such thorough application of this means of protection cannot be safely neglected in any city *to which persons may come from towns where cholera is epidemic.* Sanitary chemists advise that the estimated quantity of these privy and sewer disinfectants required for each person daily, in the presence of cholera, should be one half an ounce sulphate of iron and one half a drachm or one half a teaspoonful of carbolic acid.]

THINGS TO BE DISINFECTED.

(*a*) *Beds, Bedding, and upholstered Stuffs.*—Expose to sunlight and ventilation freely and frequently. If actually infected, thoroughly moisten every part with a strong solution of 6 or 5.

(*b*) *Soiled Clothing, etc., from the Sick with Cholera or any contagious Disease.*—Use solution 5 or 6, precisely as directed, and as soon as the soiled articles are removed from the patient. Or immerse them at once in boiling water. In any case of infectious disease, the clothing must be boiled previous to washing or drying. Infected clothing must be thrown into the water at boiling heat. The boiling should be kept up for an hour.

(*c*) *Carpets, Sofas, Lounges, Mattresses, Floors, etc., infected by Cholera-Excrement, or by Small-pox, Scarlatina and other Contagions.*

First.—Thoroughly moisten every infected thing with one of the carbolic or permanganate solutions (No. 5 or No. 6.)

Second : Rules for Fumigation.—To give still greater completeness to the disinfection required for an infected apartment and thick woolen stuffs, carpets, etc., to which boiling heat cannot be applied, fumigate with sulphurous acid, thus: 1st. Arrange to vacate the room for twelve hours; close every window and aperture, and, upon an iron pipkin, or kettle with legs, burn a few ounces of sulphur; the quantity required for effectual work will depend upon cubical space of the apartment, and there should be enough to burn rapidly until want of oxygen in the air shall extinguish the flame. Instantly after kindling it every person must withdraw from the place, and the room must remain close for the succeeding eight hours. If any other kind of fumigation is resorted to (as that by chlorine, bromine, or nitrous acids), a sanitary officer or a chemist should superintend the process. Fumigation should be resorted to in dwelling-houses only by official orders or permission, or under the personal superintendence of a competent medical man, as the disinfecting gases are very poisonous.

(*d*) Finally, let fresh air and sunlight purify every place they can reach. Open and dry all cellars and vaults, and keep the grounds and surfaces about dwellings as dry and clean as possible. Use fresh lime or the "calx powder" freely upon wet or offensive surfaces. Flush the water-closets and drains daily before throwing in the disinfectants as directed. Domestic and personal cleanliness should be everywhere observed. *There are no substitutes for pure air and water.*

TO SEXTONS AND OTHER PERSONS IN CHARGE OF THE UNBURIED DEAD.*

CLEANSING.—In cleansing the surface of the corpse, especially the parts most soiled by discharges, use the solution of *Chlorinated Soda* (Labarraque's Solution, of the shops), a pint to two quarts of hot water. A solution of *Chloride of Lime*, made by straining or decanting a gallon of water, into which a pound of that substance has been thrown, answers the same purpose. This cleansing is required for the whole person in every case of death of *cholera*, *fever*, *scarlatina*, or *small-pox*. Cloths, sponges, &c., employed about the dead must be instantly burned or boiled.

DISINFECTION.—Fill a large wad of cotton or fine shavings with two pounds of coal-tar powder, or chloride of lime, and place it beneath the hips; and, in case of cholera, place much more of this kind of absorbent material beneath the corpse to absorb and disinfect the purged fluids that may flow.

DIRECTIONS IN THE FAMILY.—Whatever disease has caused the death, order every garment and cloth that was used upon the dead person, and, in cholera and the infectious fevers, *whatever was about the person*, or was *soiled* during sickness, to be immediately boiled, or, until boiled, to be kept in one of the disinfecting solutions. Ventilate every room and closet upon the floor where a death has occurred from an infectious disease. Keep windows and fire-places open for several days.

BURIALS.—The dead of cholera should be interred as soon as practicable, and always *within thirty-six hours* after death.

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* This card has been given out daily by the Burial Permit clerks since May, 1836—E. H.

"C."

Office of the Attorney,
Metropolitan Board of Health,
New York, *November* 29, 1867.

To the Secretary of the Metropolitan Board of Health:

Though my duties as Attorney of the Board of Health during the past year have been less engrossing and laborious than during the previous year, they have still required a large portion of my time. The Courts, as a whole, have been induced to interfere less with the operations of the Board, and, though the daily routine duties have required constant attention, there is nothing in them that calls for any particular remark.

The bill drawn by direction of the Board, in order to remedy defects in the original act, and to enable the Board to more adequately fulfill the object of its creation, was finally adopted by the Legislature. Though it met, at first, with much specious opposition, yet when its provisions came to be carefully examined, it passed both branches without opposition. The beneficial effects of this new law, in promoting efficiency and economy in the operations of the Board, have been felt almost daily.

Besides the bill to which I have referred, the last Legislature also passed two other bills affecting this Board. One of these is what is known as the "Tenement House Act." This Act was drafted by myself, in consultation with the Sanitary Superintendent and the Engineer, but at the request of a member of Assembly from Brooklyn; it was modelled after the English law, but is far less stringent than that. Being the first attempt in this country to remedy by legislation the evils connected with tenement and lodging houses, it was made as little burdensome as was consistent with any practical efficiency. No attempt was made to prevent the great evil of overcrowding, or to limit, in any way the number of persons who might occupy any house or room. It was not deemed that the time had come when legislation in that direction was possible. What was sought to be done, was to secure at once some degree of ventilation for rooms and halls, some attention to cleanliness, some security against dampness and proper water-closets or privies; while, at the same time, prospective clauses in the law should provide for further progress in this direction.

This law did not take effect until July 1st, and it was not for some months after that time that any attempt was made to enforce its provisions, further than by calling the attention of owners to it. Very great improvements were voluntarily made at once in the condition of many of this class of houses. Toward the end of the year about one hundred suits were commenced by direction of the Board, against persons who had failed to comply with the law. With very few exceptions, the persons so sued hastened to do what was required, and the suits were discontinued, on payment of the actual cost to the Board.

While this law is by no means perfect, experience has shown that it is in no respect too stringent, and does not require burdensome or expensive alterations in the premises affected by it. It has not called forth any considerable degree of opposition, though it has sometimes been confused in the public mind with what is known as the "Unsafe Building Act," to which there has been an organized opposition.

The other law passed by the Legislature related to sunken lots in Brooklyn, and gave the local officers power to drain such lots, on the recommendation of the Board of Health. A law, giving similar powers to the Croton Aqueduct Board, in New York, would be productive of great good. As it is now, the sunken lots, filled with stagnant water, into which all sorts of filth and dead animals are thrown, constitute one of the great existing evils; evils which the orders of the Board cannot remedy, because there is no power to drain across other lots, nor to equitably assess the expense on different owners. Moreover, it is very frequently impossible to ascertain the names of the owners of sunken lots, and the law contains no provision for service upon unknown owners. In consequence of this last defect, a large number of orders, made against some of the worst nuisances on Manhattan Island, have necessarily remained unexecuted.

The provisions of the law of 1867, giving the Board a lien upon land for expenses incurred by it, have imposed some labor upon me, but the promptness with which the work has been done, since it was put in charge of the Sanitary Superintendent, and the reasonableness of the charges, combined with the fear of the lien, have led to the payment of by far the greater number of bills before they passed into my hands.

The total number of liens filed have been thirty-one, for an aggregate sum of $664.

As already stated, the Courts have, as a whole, interfered with the operations of the Board far less during the present year than during the preceding one. On January 17, 1867, the Superior Court at General Term reversed the decision rendered by Judge McCunn, in the case of Reynolds, the shell-lime burner, referred to in my last report. The opinion given by Chief Justice Robertson was able and lucid, and received the apparent concurrence of all. It led to the discontinuance of the action, and the removal of the works of the plaintiff to another part of the district. The actions of three or four other shell-burners were also at once discontinued, and all litigation, so far as the Superior Court was concerned, was ended. The same was true of the Court of Common Pleas.

In June, the General Term of the Supreme Court affirmed the decision of Judge Ingraham in the Washington and Fulton Market cases, holding that the powers given to the Board over them were only health powers. Early in June sixteen actions were commenced in the Supreme Court by butchers, the object of which was to prevent the Board from carrying out its policy of removing the slaughter houses from all that portion of New York south of Fortieth street. In one of these, that of Schuster, a motion for an injunction was carefully argued on June 21. No decision was rendered until November 19, before which time most of the butchers had accommodated themselves to the rules of the Board, and all the business of butchering had been removed above Fortieth street. The decision was, to the surprise of all, adverse to the Board; and, in connection with a subsequent injunction granted by Judge George G. Barnard, in the case of Jantzen, it deprives the Board, for the present, of any power to remove the slaughter-houses or to prevent cattle-driving in the streets. For the purpose of procuring a speedy decision by the Court of Appeals of the questions involved, four agreed cases were submitted to the General Term, in Kings county, on December 13. As soon as they are decided, an appeal will be taken to the highest Court. The decision of the latter will, it is hoped, result in defining the powers of the Board so carefully that they cannot be mistaken either by the Courts or the Board.

The decision of Judge Joseph Barnard, with reference to the use of Seguine's Point by the Board, was, after argument, affirmed by the General Term, and subsequent legislation rendered it unnecessary to pursue the case further.

The only other litigation in which the Board has been involved have been in suits commenced by it. Two or three of these were actions against physicians, for failing to make the proper reports, and a considerable number were brought to recover penalties for failures to comply with the orders of the Board. On February 7, an action was brought against one of the Ferry companies, to recover a penalty for the neglect which, it was claimed, led to an accident on the Idaho. A demurrer was interposed by the company, and argued May 14, but no decision has been rendered.

Your obedient servant,

GEORGE BLISS, Jr.,

Attorney, Metropolitan Board of Health.

Office of Council, Metropolitan Board of Health,
New York, *December* 24, 1867.

To the Secretary of the Metropolitan Board of Health.

The action of the Board during the past year has demonstrated that the laws under which it is organized are reasonably adequate to secure efficiency in the discharge of its general duties; and unless the Courts shall finally sanction some limitation of the powers apparently conferred upon the Board, there is every reason to think it may continue to discharge the proper functions of a Board of Health with as much vigor and promptness as is consistent with the habits of the people and the proper protection of the rights of person and property.

There will doubtless at all time be found those, on the other hand, who, feeling the pressure of the just action of the Board, will make complaint that it is unreasonable and meddlesome; and on the other, those who, perceiving many things they regard as abuses to exist will equally complain because summary redress is not at once and universally administered. And between these extremes, in the just exercise of its large and responsible powers, the Board will be called upon to act with forbearance and with firmness.

The last year has, I think, exhibited a sensible diminution of the unreasonable jealously which was awakened by the vigorous action of the Board during the first months of its existence and when called upon to proceed in the exercise of large powers with unusual promptness in view of the threatened visitation of the cholera. As a joint result of this feeling and of the salutary legislation of last winter, it has been found less difficult to secure an enforcement of the orders of the Board and a collection of the expenses thereby incurred.

But it is not to be expected that a Board of Health will become universally popular; for the principal cause of its creation is the fact that there are, in every community, and especially in large cities, considerable numbers of people who habitually so disregard the comfort of others and so conduct their business, as to require a regulation and coercion more prompt and summary than can be secured in the regular civil or criminal courts; and it not unfrequently happen that the profits made by such people are proportioned to their disregard of the rights of others, and their neglect of precautions demanded by the common safety. And it is to be expected that when a large number of persons are engaged in so conducting the same kind of business, and are united for common attack and defence, they will be able to make a strong and protracted resistance, and to spread abroad plausible rumors, adapted to create an impression that they are oppressed by a Board of Health, and this even when the Board may be proceeding with far less vigor than is demanded by the general voice, and needful to guarantee the common comfort and security.

The ordinary legal tribunals, in which the litigants are of all classes and occupations, are in the main free from those sources of attack and prejudice which are thus encountered by a Board of Health, which, of necessity, at all times stands between those on the one hand who demand exemption from interference in doing as they please even to the destruction of general comfort and safety, and those on the other who clamor for summary abatement and suppression of erections and occupations, often with little regard for the fundamental rights of property or of person.

I am convinced that it is desirable, in order that a Board of Health may have the time and disinterested independence needed for the discharge of its legitimate duties, that there should not be imposed upon it other duties incongruous in their nature and exacting in their demands.

In this connection it is proper to refer to the Act of last winter creating a corporation known as the "Soldiers' Business, Messenger, and Dispatch Company," which is authorized to erect business booth or stands upon streets and sidewalks of the cities and villages of Metropolitan Police District.

The section 6 of this Act (Ch. 382 of the Laws of 1867) declares that "the number, size, and location of said booths or stands shall be determined by the Metropolitan Board of Health, or a majority of said Board, who shall determine and locate the same, upon application by the President of this corporation."

While it is for the Legislature to judge what duties it is expedient to confer upon the Board, it must be conceded that the duties imposed by this act are wholly foreign to the theory and practical sphere of such a Board.

In view of the provisions of another law of the last session, affecting the power of the Board, it was advised to decline locating any booths or stands, unless ordered by the Court to administer the law creating this corporation. The corporation thereupon obtained a *mandamus* from the Supreme Court, by which the Board was required to act under the law, and it has done so, and some booths have been located. In the exercise of the duties thus forced upon the Board, much time has been devoted to the subject, and perplexing legal questions have arisen, which, however, it is not necessary here to specify, as will come up for solution when the business operations of this company shall become sufficiently conspicious to attract public attention.

The subjects relative to which there has been the most legal discussion and litigation are the slaughter and driving of cattle in the densely populated portions of the City of New York. During the year 1866 and the early part of the present year, large slaughter-houses or abbattoirs, of a capacity adequate to accommodate all the wants of the city, had been erected above Fortieth street, on the shore of the island or wholly outside of it. The dangers of cattle driving in the crowded streets and avenues below Fortieth street had long been a subject of complaint, and some lives had been lost and many perilled, as the result of such driving. The statistics of disease and death had demonstrated the unhealthy effect of slaughtering in that part of the city, and very numerous complaints or petitions attested to the Board the earnest and just desire of the public for the removal of slaughter-houses from these densely-populated quarters.

The Courts had also repeatedly declared that such houses in such sections of the city were *prima facie* nuisances.

Previous to the passage of the present Health Laws, the health authorities of the City of New York had, among others, the following powers:

"It shall be the duty of the City Inspector, on complaint being made to him, or whenever he shall deem any business, trade or profession, &c., *detrimental to the public health*, to notify such person or persons to show cause before the Board of Health, &c., why the same should not be discontinued or removed, &c.; cause may be shown by affidavit, and the order of the Board of Health shall *be final and conclusive thereon.*"

Subd. 4th. Every person who shall "disobey any order for the abatement or removal of any nuisance, &c., described in said order, &c., shall be liable to arrest and summary punishment by fine, not exceeding $1,000, or imprisonment, not exceeding one year, or by both such fine and imprisonment."

And those of the City of Brooklyn had these powers:

Title 2, sec. 13, sub. 20, of the Brooklyn Charter, gives the Common Council of that city "power to compel the owner or occupant, &c., of any slaughter-house, &c., cleanse, *remove* or *abate* the same from time to time, as often as may be necessary for the health, comfort, or convenience of the inhabitants," &c.

And subdivision 6 of the same sec. 13 gives power "to locate, regulate, and *remove slaughter-houses.*"

Recognizing this condition of things, the Legislature at its last session, enacted a law (chap. 700 of the Laws of 1867) providing that cattle should not be driven in the streets or avenues of New York or Brooklyn, except as the Metropolitan Board of Health shall prescribe, and also declaring that "so long as *such Board shall permit the business of slaughtering* animals for food to be carried on in that portion of the City of New York *south* of Fortieth street," it shall be lawful to drive, as the Board shall provide, south of that street. This act seemed to enlarge the powers of the Board in regard to the subject of the driving and slaughtering of cattle beyond what would belong to it in the exercise of its ordinary powers as a Board of Health.

The Board, in the exercise of both branches of its power, took separate proceedings against each slaughter-house below Fortieth street, and afforded the parties affected by its action, a "full and fair opportunity to be heard before the Board" (as the health laws provide), on the question whether each individual slaughter-house was in itself dangerous to life and health. The parties affected by the orders, by apparent concert of action, disregarded the service of the respective notices on them—ignored the proposed action of the Board, and very soon appealed to the Courts. The Board, upon separate consideration of the cases, duly determined the places complained of to be dangerous to life and health, and ordered the business of slaughtering thereat discontinued. Thereafter the business of driving and slaughtering cattle south of Fortieth street was forbidden by ordinance.

Cases soon came on in the Supreme Court for hearing, on applications for injunctions against the Board interfering with slaughtering in the district referred to, save for the mere purpose of "police regulation." The record of the action of the Board was not brought before the Court by the complaining parties.

On the part of the Board it was claimed that its action was within its jurisdiction; that it was reasonable, necessary, and just; that the complainants should have appeared before the Board and shown any facts available tending to make it appear that slaughtering could be safely conducted; that a proper and efficient remedy against any unjust or unauthorized action of the Board could in all cases be had by *certiorari;* and that the Board should not be enjoined at the instance of a party who spurned its authority, declined to appear before it in a case clearly within its jurisdiction, and in reference to a subject as to which an Act of the Legislature and the danger to life and health so clearly called for the exercise of its powers.

The matter was held for some months under advisement—*and in the meantime, from August to December, there was a suspension of the driving and slaughtering cattle delow Fortieth street in the City of New York*—when the Court enjoined the Board. And since, the driving and slaughtering cattle has been to a considerable extent resumed.

The litigation upon these subjects is still pending; and it is not, perhaps, advisable to attempt to state what may be the course of litigation. For the present the Board finds itself unable to adequately protect the public against the evils incident to such driving and slaughtering. Appeals to the highest Court would seem to be necessary to determine how far the reasoning of the Supreme Court is to be finally accepted as a true exposition of the law, and what are the powers and duties of the Board as to subjects of such great importance to the comfort and safety of so large a portion of the population of the City of New York.

No litigation against the action of the Board on these subjects has arisen in Brooklyn; and it is to be hoped that the final result as to that in New York may be such as to secure alike the rightful protection of the private rights of persons and property, and the exercise on the part of the Board of such power as is necessary to prevent undue invasion of the health and comfort of the great body of the people of that city.

D. B. EATON,

Counsel, Metropolitan Board of Health.

"D."

Office of the Engineer,
Metropolitan Board of Health,
New York, *December* 1*st*, 1867.

To the Secretary of the Metropolitan Board of Health:

In presenting my second annual report, as Engineer of your honorable Board, care has been taken that there should be as few repetitions as possible of the contents of the first; and it has been considered rather as a continuation of it, with such further suggestions and recommendations as have resulted from a more extended experience.

From reports of Inspectors, and from my own personal observation, I am satisfied that the sanitary condition of the District has been improved since the organization of the Metropolitan Board of Health. Complaints of nuisances have become less frequent; requests and orders for abatement have, in general, been promptly complied with. Where orders for constructions have not been attended to by owners or lessees, "finals" have been issued by the Board; and since the first day of August, they have been placed in my hands for execution. Propositions were solicited and received from responsible parties for different classes of work and material, and a scale of prices has been established, as far as possible, under which work has been done. This scale refers chiefly to plumbing and mason work in this city and Brooklyn. With the exception of a few orders executed in Mott Haven and Melrose, no work has been given out without reinspection and full report to me, or on personal inspection.

The work has been done, subject to my supervision, and on completion has been inspected; and, when requisite, measured. The bill has been made ont, with the name of the party inspecting, and approved by me; it has been presented by the party executing the work to the parties on whom the order was served. The following is the form of the bill-head adopted:

New York,......................186

M............ ....

................*of Premises No*................ *Street.*

To the Metropolitan Board of Health, Dr.

To expenses incurred in the execution of Order No............

Inspected...............*day of*...............186 , *by* ....

Approved...............................

Engineer Metropolitan Board of Health.

Work done by ....*to whom payment may be made.*

It will be seen, by a glance at the bottom of the heading, that the parties executing the work are authorized to receive payment for the same. In case of refusal, it has been so endorsed, and then referred to the Sanitary Superintendent for collection. Of the amounts collected by the different parties, and the amount still remaining unpaid, and of the total amount of the work done by me, I would respectfully refer to the report of the Sanitary Superintendent.

Considering the peremptory character of the orders and their execution, less complaint has been made by owners and lessees than might be expected; many have paid promptly; many, after notice from the Sanitary Superintendent, have come to my department for explanation, and have then settled their bills. In some cases the work has been so satisfactory, that other premises, on which there was no order of the Board, have been plumbed at the wish of the same owners, and by the same contractors. Cases have also occurred in which parties have asked me to execute any order for work that might be issued against their premises. But there is one class of orders which, in their execution, have not, and probably never will, give satisfaction, viz: " to repair roof so as not to leak." These orders can seldom be subjects of estimate or come under any price-list." It is almost impossible to repair an old slate or shingle roof so as to make it completely water-tight; and the cost may sometimes exceed that of a new roof. Where complaints are made of leaky-roofs, as " dangerous to life and detrimental to health," I would recommend that such orders be put into the hands of your attorney to prosecute for non-compliance, rather than given to the Sanitary Superintendent for execution.

Few orders have been given out by me for execution outside of the cities' limits. With the force in my department it has not been possible to have such supervision of the work as I should consider necessary; and so far as could be done, without manifest injury to their sanitary condition, such orders have been returned, as those upon premises with short leases, where work was to be done by lessees, with a recommendation that the order be considered as complied with if the premises be kept clean. Orders of an estimated cost of execution, exceeding two hundred and fifty dollars ($250), have been referred to your Board for further action.

Sewer Connections.—It has been the uniform practice of your Board, by request and orders, to sewer, as far as practicable, all premises. How far those requests and orders have been complied with, may be readily understood by comparison of the sewer permits granted, or money received for sewer permits in the cities of New York and Brooklyn, for several consecutive years, extracted from reports of the Sewerage Departments.

For New York.

The following table exhibits the yearly revenue derived from permits to connect premises with the public sewers, as collected by this Department:

January 1, 1861, to December 31, 1861	$15,981 00
1, 1862, to December 31, 1862	14,193 00
1, 1863, to December 31, 1863	16,169 00
1, 1864, to December 31, 1864	15,375 00
1, 1865, to December 31, 1865	16,393 30
1, 1866, to December 31, 1866	29,775 50
1, 1867, to December 1, 1867	46,591 50

For Brooklyn.

Number of connections made with sewers.

Year.	Number of connections made.
1859	422
1860	1,695
1861	4,895
1862	3,168
1863	1,948
1864	1,301
1865	1,519
1866	3,605
1867, to December 1	2,858

As a sanitary measure, the construction of water-tight privies, and their connection with the street sewer, and the discharge of hydrant waste, and roof-water into them, removes in a cheap way, a great cause of offence, both within and without the premises; but it is only a means which, by improper use, may become a source of annoyance rather than a benefit. Many tenement-houses require as much inspection after as before connection is established. The sewer-pipes and grates become clogged by extraneous matters thrown into the vault through ignorance, heedlessness, and often wilfulness, as an exhibition of spite by the tenants toward the landlord.

In the construction of privy vaults, as adopted by the Croton Department and the Brooklyn Board of Sewer Commissioners, many proprietors to save the length of sewer and flushing pipes, have brought the vaults too near the house, the contents of which, stirred up by the water from the leaders during rains, throw off a great effluvium. The remedy, in such cases, is to disinfect with sulphate of iron. But it must be observed that the privy-vault, as recommended, is only a large hopper-closet, with intermittent water-supply—a hopper whose extraordinary size is dependent on the character of the parties using it; as they will use it for ashes and garbage, some spaces must be left for the deposit of these articles. Among the better class of tenants the vault may be reduced in depth below the trap; or a school-sink may be substituted. Whatever is used in tenement-houses, when the responsibility is divided, there should always be some person in charge to look after the premises, under whose supervision the premises would always be kept in order, and the tenants themselves would become more cleanly. Whenever, from the character of the occupants I have considered it safe, orders for privies have been modified to orders for water-closets.

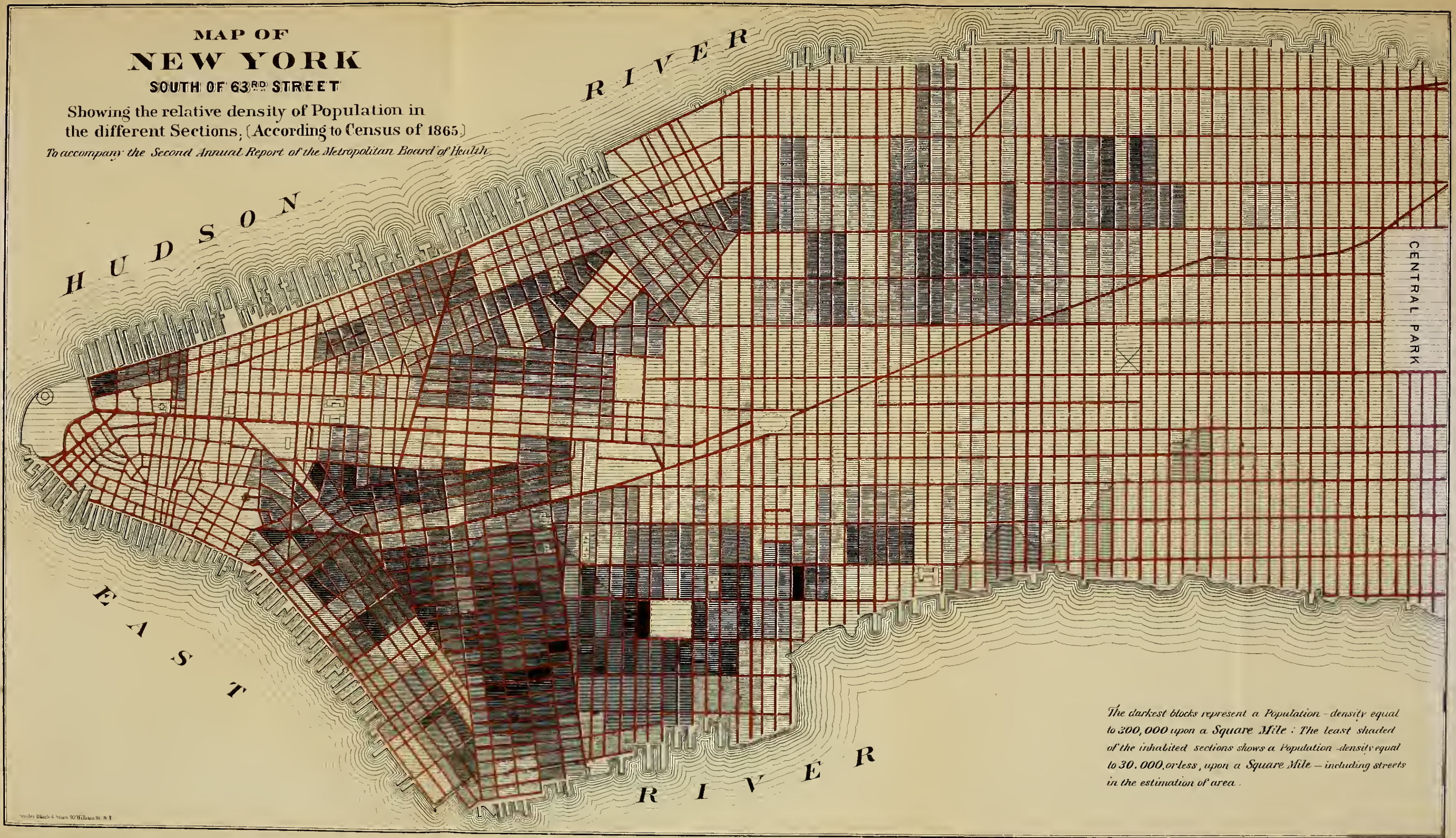
Water-closet with defective water-supply due to want of head in the street mains.—Last year orders were made to put up pumps and cisterns, but when cisterns will not fill by the increase of head during the night, and their supply depends entirely on pumps, the trouble has been to compel somebody to work them. I have, therefore, but seldom endorsed such orders this year. and have instead recommended to lessees complaining, that they keep a pail-supply in the closets as an equally good means of flushing, and by far more economical in the use of water, and as involving less labor than pumping; in such cases there will be no complaint of the emptying of the cistern by negligence in leaving some cock open.

Sunken Sidewalks, Curbs and Gutters.—Of these there have been many complaints this year, and, by direction of your President, I saw the Assistant Street Commissioner of this city, and, after consultation with him, decided that the surest and quickest remedy lay within your Board. The old order was therefore continued to "relay sidewalk and reset curb and gutter to established grade." In one case this order has been issued to every owner in Fifty-third street, in the blocks between Second avenue and East river; and has been complied with by all, with a single exception, the owners thereby hoping that the Croton Department would repave the street, but that Department was unwilling to assume the responsibility without an explicit order from your Board, especially as the owners wished to have the pavement changed from the cobble to the Belgian.

Tenement-Houses.—No orders for the ventilation of tenement-houses have been executed under my direction; but notices have been served by the attorney for non-compliance with the requirements of the Act of 1867; and, at his request, I have personally visited several, to see what could be done to bring them within its provisions, as at this season windows and ventilating flues are kept closed by the tenants themselve to preserve as much as possible the warmth of the room; it seems useless to make any constructions which are not wished for by the tenants, but are made perfectly void by their acts.

The form of ventilator "in the roof at the top of the hall" is to be approved in this city by the Inspector of Public Buildings; but in Brooklyn by the Assistant Sanitary Superintendent of the Metropolitan Board of Health. In regard to the former I do not know that any form has been approved, but it has been decided by the latter, after consultation with me, to call any louver blind, or adequate aperture through which sufficient air can pass, and rain not admitted, a proper ventilator according to the requirements of the Act.

To show the crowding of the population in the different wards of our city, I have prepared a plan based upon the returns of the census of 1865, showing in light and shade their relative number of inhabitants in the different "enumeration districts" below Sixty-third street. The entirely black parts represent a population of nearly 300,000 to the square mile; and the lightest shade, with



MAP OF
NEW YORK
SOUTH OF 63RD STREET
Showing the relative density of Population in
the different Sections, (According to Census of 1865.)
To accompany the Second Annual Report of the Metropolitan Board of Health.

The darkest blocks represent a Population-density equal to 300,000 upon a Square Mile: The least shaded of the inhabited sections shows a Population-density equal to 30.000, or less, upon a Square Mile — including streets in the estimation of area.

Snyder Black & Sturn 92 William St. N.Y.

the exception of the squares, a population of 30,000 or less to the square mile, including streets but not squares, in the estimate of space. It will be observed, by mere inspection of this map, how little provision has been made for the ventilation of the most thickly-crowded districts and narrow streets, and an almost entire absence of public squares. Some writer has called the public squares of London its lungs. The Fourth, Sixth, Seventh, Tenth, Eleventh, Thirteenth, Fourteenth and Seventeenth wards are almost entirely deficient in this vital organ. If the upper part of the city requires a Boulevard drive, why not have a Park avenue as a walk for predestrians in these quarters, by widening Avenue A, Essex street and Rutgers street to East river.

Sunken Lots and Stagnant Water.—An act was passed, at the last session of the Legislature, of which the first section is as follows: "Whenever it shall appear to the Metropolitan Board of Health that any surface water has been or shall be liable to be ponded at any place in the city of Brooklyn, and remain stagnant, so as to be or become a nuisance dangerous to the public health in the vicinity thereof, they shall cause a notice in writing to be served upon the Board of Sewerage Commissioners of said city, specifying the location of such place."

With the Alderman of the ward and the Inspectors, I have made a careful examination of the districts where this nuisance existed, and on a proper complaint being made thereof, your Board has caused notice to be served on the Sewer Commissioners, agreeably to the law; and in compliance with these notices the Commissioners have expended about seven thousand ($7,000) dollars in draining these ponds, but the provisions of the law seem inadequate to all the cases, in regard to the funds from which such work can be paid; but the difficulty is mostly from the effect of the last clause of section 2, as follows:

"So as to drain such water from such pond or place, and cause it to flow and be discharged into some public street or sewer," the streets being, in most cases, the cause of ponding, and are entirely above the level of water. And the districts most complained of are without public sewers. When there are single lots, or lots together belonging to one owner, and there are sewers in the street, the orders issued by you "to connect premises with sewer, and fill and grade lots to discharge all surface water into the sewer pipes," have, in most cases, been complied with or executed.

There should be general orders of this character issued on the lots at the south-easterly corner of Central Park. Neither city authorities, trustees, nor any commissioners seem to have power to compel or even execute drainage. I have made frequent journeys to Staten Island, and also to Westchester county; have met trustees and others interested in the sanitary condition of these neighborhoods, and trust that, during the session of the Legislature, some general law will be passed giving authority to some board, elective or appointed, to enter upon any premises and cause suitable drains to be made, assessing damages and benefits, or making surveys and plans, and establishing lines of drainage, and making them permanent, as with the sewers established in Brooklyn. As in Brooklyn, it will not be necessary when these lines are thus established, that they should be executed wholly or even in part; but, as in the suburban districts, where the population is increasing with great rapidity, farm or large landed proprietors often cut their land in squares and streets for their own immediate profit; and, as these streets become built on, each year increases the difficulties of drainage. Whereas, were positive lines of sewers or drains laid out, then there would be some conformity of streets to suit these lines, and some provisions made for their easy maintenance; but if postponed, every year adds to the difficulty of construction, and increases the attending expense.

Sewers, both in this city and in Brooklyn, have been very much extended during the past year, and the Departments in both cities, in regard to all matters within their power, have cheerfully complied with the recommendations of the Board of Health.

Damp and Wet Cellars.—When such can be drained by connection with the street sewer, such orders have been endorsed and complied with or executed; some have been filled to make such drainage effective. But there has been a large class of complaints of such cellars along our river fronts, or in the low parts of the city, which are more or less subject to be directly flooded by the tide, or by the backing up in the street sewer during high tides. On most of these complaints no orders have been endorsed; and when they are endorsed and passed by your Board, they have not been executed, as the cost of scoring and cementing would exceed the limits prescribed by your Board. No such cellars should be permitted to be used as habitations, and when used for storage, it seems rather a matter of pecuniary interest between landlord and lessee, than as a sanitary measure to be executed by your Board. The improvement and drainage of these cellars would add to the value of the property, and advance their sanitary condition. But the remedy proposed is general, and not local. From data obtained from the Croton Department, and by a plot of contours on a map of the city, I estimate that below the line of Fourteenth street there are at least four hundred (400) acres of house lots where deep and dry cellars cannot be constructed, except at great cost. To effectually drain this valuable area, I would suggest an intercepting sewer along our river fronts, at an average low-tide level, discharging its contents into a covered receiving basin at the Battery, whence they should be pumped out far into the river. Of the feasibility of this scheme there can be no question, after the developments of the London experience. Whether or not this sewer should be constructed entirely independent of the present sewers, leaving them still to discharge the rain-fall and drain the buildings on the higher levels, or intersect the present sewers and discharge as much as possible at the Battery, will be a question of after-consideration. I should prefer the former. I have studied the details of both schemes, and think that either would, financially, be profitable, were it to be executed at the cost of the property owners; but this is included in our next subject.

Wharves.—No complaints have been referred to me, during the present year, of the unsafe and dirty condition of our wharves and piers. There has been no material improvement in their condition, and any orders from your Board would he useless, so long as there are no responsible parties on whom to serve the order, nor funds by which the same might be executed.

The Chamber of Commerce has lately appointed a committee to take the condition of our wharves and piers into consideration, and devise some scheme by which permanent structures may be constructed commensurate with their commercial importance. Were it but a financial or engineering question, its solution would be very simple; larger enterprises have been undertaken; more difficult works have been built; but the question is a legal one, how to acquire title to construct the work, and then secure the profits of the constructions. For the right of way of an elevated railroad along the bulk-head line established by the commission, a company could be organized who would not only build a permanent line of stone wharves, but also within it an intercepting sewer, and tunnel of sufficient size for gas pipes, to remove all gas works without the city limits.

Of the necessity of a steam road in the city there can be no doubt, and of the many great conveniences of a belt line, which would serve not only for the conveyance of passengers, but also for the distribution of freight. The right of way should not be a matter of gift but of purchase.

Soldiers' Business, Messenger and Dispatch Company.—Localities which have been selected by this Association I have examined, and have reported whether the booth would be an obstruction to traffic and transit. Plans have been made exhibiting the main features of their position, to put you in possession of facts to enable you to judge of their fitness for booths, rather than to depend on my mere report.

W. E. WORTHEN,
Engineer, Metropolitan Board of Health.

"E."

Office of the Sanitary Company,
Metropolitan Police, 301 Mott Street,
New York, *November* 1*st*, 1867.

To the Secretary of the Metropolitan Board of Health:

I have the honor to transmit the annual report of this branch of the Metropolitan Police Department for the year ending October 31st, 1867, containing, as will be found in tables annexed, the number of reports made to the Metropolitan Board of Health, the number of orders served, issued by said Board; the number complied with by owners, and the number returned as not complied with. Also the number of privies cleaned, and the number of dead animals and the amount of unsound meat, fish, &c., removed from the city limits under the supervision of this department.

Yours respectfully,

BOWEN G. LORD,

Captain Sanitary Company, Metropolitan Police.

Number *of Complaints of Nuisances reported to the Metropolitan Board of Health from November* 1*st*, 1866, *to October* 31*st*, 1867, *inclusive*

Privy vaults full	11,503
Privy vaults and water-closets filthy	855
Yards filthy	1,671
Cellars filthy	1,250
Sewers stopped and filthy	1,599
Houses (tenement) filthy	522
Areas and alleys filthy	515
Cess-pools and cisterns filthy	476
Slaughter houses filthy	12
Stables filthy	178
Hog pens filthy	102
Vacant lots filthy	144
Sunken lots filthy	405

Culverts full and filthy	26
Fat-boiling establishments filthy	6
Manure vaults filthy	70
Privy vaults leaking and unsafe	657
Houses out of repair and unsafe	125
Stoops out of repair and unsafe	107
Chimneys out of repair and unsafe	153
Coal vault covers out of repair and unsafe	92
Areas unsafe	4
Sidewalks unsafe	147
Street, curb and gutter stones sunken and out of repair	308
Hydrants and waste-pipes out of repair	1,062
Cisterns and cess-pools out of repair and unsafe	28
Total number of complaints	21,917

Work performed under orders issued by the Metropolitan Board of Health.

Number of Preliminary orders served, received from the Superintendent, Metropolitan Board of Health	5,489	
Number of Preliminary orders complied with	2,300	
Number of Preliminary orders not complied with	3,189	
Total		5,489
Number of General orders received from the Metropolitan Board of Health	12,149	
Number of General orders served	10,076	
Number of Gen'l orders complied with, no service	2,073	
Total		12,149
Number of Gen'l orders complied with by owners	7,836	
Number of General orders not complied with, and forwarded to the Sanitary Superintendent	2,240	
Number of Gen'l orders complied with, no service	2,073	
Total		12,149

Number of Special orders received from the Metropolitan Board of Health	2,502	
Number of Special orders not complied with and returned to the Sanitary Superintendent	2,471	
Number of Special orders complied with, no service	31	
Total		2,502

Number of Privies cleaned, Dead Animals removed, Unsound Meat, Fish, &c., seized and removed from the City Limits.

Number of Privies and Water-closets cleaned			17,098
do	Loads of night-soil removed		65,715
do	Dead horses removed	4,417	
do	Cows removed	131	
do	Goats removed	189	
do	Sheep removed	229	
do	Hogs removed	376	
do	Dogs and Cats removed	6,198	
do	Deer removed	5	
do	Calves "bobs" removed	423	
Total number of Dead Animals			11,968

		Pounds.	
Unsound Veal removed		65,464	
do	Mutton removed	54,351	
do	Beef removed	44,691	
do	Pork removed	5,052	
do	Fish removed	75,100	
do	Poultry removed	11,712	
Total			256,370
Unsound Eggs removed			21,500
Number of barrels of Offal			91,920

"F."

REPORT

OF THE

SANITARY COMMITTEE ON PROSTITUTION.

To the Metropolitan Board of Health:

The Sanitary Committee, to whom was referred the resolution offered in the Assembly by Mr. Jacobs, viz.:

"*Resolved*, That the Board of Metropolitan Police and the Metropolitan Board of Health be required to furnish to this House, at their earliest convenience, their opinion as to the necessity and the probable result of legislation looking to the more thorough restriction of prostitution in the city of New York,"

Beg leave respectfully to

REPORT:

That their experience as physicians has rendered them familiar with the extent to which prostitution is carried, and with the evils arising from the diseases which eminate from it. Private practice and attendance at the dispensaries and hospitals show that these diseases are farspread, and are of the most deplorable character.

High and low, rich and poor, are affected by venereal diseases, and no class has a monopoly of virtue. If it were so, the moral would before this have exterminated the immoral. Prostitution has always existed in all large communities, and will continue to exist until the present order of society shall be changed, or until the golden age of virtue, which poets have foretold and the wise and good anticipated, shall have come.

The actual and important fact is, that venereal disease is sapping the strength of the people. Husbands give it to their wives, and mothers give it to their children; and, where it has once entered the constitution, no one can tell whether it ever will or can be eradicated. Every part of the body is invaded—the skin, brain, eyes, throat, nose, lungs and bones. The surface of the body becomes covered with sores and scars, which endure forever afterward. The blood itself is poisoned and loses its red globules, which were intended to give vivacity to the brain and strength and vigor to the muscles. The poor victim of syphilis is racked with pains, permanently debilitated, and incapable of hard work: and, if his private means are insufficient for his support, must seek a refuge in the hospitals or almshouses. Death is often his best friend; and, if it comes early, he may be saved from a lingering consumption, or some of the varied forms of scrofulous diseases.

The picture is not overdrawn. The simple facts, as just stated, are common and beneath the truth; yet, there are some persons who, from the superior excellence of their constitutions, or from using medicines early and sedulously, escape the severer penalties of the disease. But no one can tell, in advance, who these favored individuals are to be, for, with all the external signs of flourishing health, there often exists some vice of constitution which syphilis will find out, develop and render incurable.

Innocent wives get the disease from depraved husbands, and go through the same stages of suffering, broken health and premature decay. Their children are born dead or diseased, wrinkled, covered with eruptions, and, if alive, affected with a wheezing cough and catarrah. It would be a fortunate event if their lives could always terminate before they had grown to mature age, and before they were old enough to generate a race of decrepit and feeble children to become burthens to themselves and to society.

Syphilis is so insidious that a person attacked with it never knows, with certainty, that he is cured. A little of the poison, left uneradicated, may taint again his whole system.

Your committee have known repeated instances where young men, who (having once had the disease, and believing themselves well), have ventured to marry, have generated diseased children, and these children, in utero, have given the disease to their mothers. This, too, after a period of six or eight years has elapsed, since the disease was contracted, during which time these young men have led virtuous lives.

Physical pain, and the ruined health of wife and children, perhaps their deaths, or the loss forever of the hope of offspring, may seem punishment enough. But to these must be added the consciousness of guilt. Their sins will rise from the buried past, and, like reproving ghosts, haunt their souls forever with remorse and shame. No imagined suffering can transcend misery like this.

No one knows what the young man is who proposes to marry his daughter. He may possess a good character and the noblest qualities, and yet this daughter may give birth to diseased children, and die of the diseases which prostitutes have generated and disseminated. These facts must bring the subject home to every individual; and all ought to resolve that such diseases shall not continue to exist, if, in God's good Providence, they can be eradicated. The question, moreover, is not a private one, but of great political importance—for the health of the citizens is the wealth and power of the State. The laboring population are ruined in health and made dependent on the public charities.

During the late rebellion the soldiers of our army were, at various times, incapacitated from engaging in active military operations, by the prevalence, among them, of venereal diseases.

It would have been a profitable study to collate accurate statistics to show the extent to which these diseases prevail in the public hospitals, dispensaries, and also in private practice. We have called for this information upon these establishments, but there has been so great delay that we cannot, at the present time, wait for full returns. Especially we regret that nothing of consequence has been obtained from the public institutions, under the charge of the Commissioners of Public Charities and Correction; for these are the chief resorts of those afflicted with syphilitic complaints.

From Dr. Frank P. Foster, of the New York Dispensary, we have been favored with a full report. He states that the whole number treated, for all complaints, amounted, in the year 1866, to 36,162. Of these

525 were cases of genorrhœa;
11 were cases of gleet;
4 were cases of balanitis;
57 were cases of gonorrhœal epedidymitis;
467 were cases of primary venereal sore (chancre and chancroid);
52 were cases of venereal bubo;
2 were cases of condylomata;
1,035 were cases of constitutional syphilis;

including 11 cases of congenital syphilis. Dr. Foster says that "22 have been registered as having diseases that were the result of venereal disease; but it must be confessed that this statement conveys but a poor idea of the real state of the case; as, first, most of the cases of these diseases have been registered simply as secondary syphilis; and, second, of the 2,666 cases, registered simply as chronic rheumatism, and, of the 135 registered as struma, it may reasonably be presumed that very many (perhaps nearly one-half), were of syphilitic origin."

In the Demilt Dispensary Dr. Cummings has reported:

Cases of primary venereal disease	176
Cases of constitutional venereal disease	147
Total	323

From Randall's Island Nursery, Dr. Henry A. Whittlesey writes that "the patients treated are children between the ages of ten and twelve years. We have, therefore, only hereditary syphilis under observation, generally modified and marked by previous treatment, rendering it impossible to give statistics of value. Of the diseases of the eyes, skin, bones, joints. &c., that may be presumed to have depended upon hereditary syphilitic taint, there have been treated during the past two years 316 cases out of the whole number in 1865 of 1,741 patients; in 1866 of 1,475 patients."

Of St. Luke's Hospital, Dr. A. A. Davis, resident physician, states "that no venereal cases, as such, are treated in this hospital; that the diseases the result of previous venereal diseases, such as iritis, rheumatism, diseases of the skin, bones and scrofula, &c., about thirty cases are treated annually; the whole number being 934 patients of all diseases annually treated."

Dr. F. P. Moffatt, physician to the Seaman's Retreat, writes that the whole number treated in the hospital in 1866, was 1,479; venereal diseases, 134; diseases the result of previous veneral infection, 192.

Dr. D. S. Teller, of Mount Sinai Hospital, says "the regulations of the hospital prohibits the admission of patients with venereal diseases, unless they are able to pay for their treatment, except in cases of females where the disease is communicated by the husband. The number of venereal cases treated in 1864 was 16; in 1865, 18; in 1866, 22. The number of secondary diseases of a syphilitic character treated in 1864 was 12; in 1865, 12; in 1866, 26. The whole number of patients admitted in 1866 was 569."

From the annual report of the Commissioners of Emigration we find the whole number of patients to have been 5,672; the syphilitic cases, 515.

Dr. Wm. H. Thompson, who was engaged during the war in examining recruits for the army, replies, "that the presence of bubo scars in 8,700 men was in the following percentage rates: Of the whole number, 8,700, eight per cent were scarred; of 5,000 recruits from the country, 1.05 were scarred; of 5,000 from the city, 12.25 were scarred. The different nationalities stand in this matter thus: Americans, 6.75; Irish, 6.80; Germans, 9.08."

To supply the deficient information, we have resorted to the published report of Dr. Wm. W. Sanger, resident physician at Blackwell's Island in 1857, who reports as follows:

Penitentiary Hospital, Blackwell's Island	2,090
Alms-house, Blackwell's Island	52
Work-house, Blackwell's Island	55
Penitentiary, Blackwell's Island	430
Bellevue Hospital, New York	768
Nursery Hospital, Randall's Island	734
N. Y. State Emigrant Refuge Hospital, Ward's Island,	559
N. Y. Hospital, Broadway	405
N. Y. Dispensaay	1,580
Northern Dispensary	327
Eastern Dispensary	630
Demilt Dispensary	803
Northwestern Dispensary	304
Medical Colleges	207
Kings County Hospital	311
Brooklyn City Hospital	186
Seamen's Retreat	365
Total	9,847

cases of venereal disease; and if we add to this an equal number for the cases attended in private practice, which (considering the multitude of such patients attended by the regular physicians and the advertising quacks) is probably less than the truth, we shall have 19,694 cases of venereal disease in the Metropolitan Health District.

Mr. Kennedy, Superintendent of Police, thinks that about fifteen per cent. of the men who offer themselves for examination, to serve as policemen, are excluded on account of the venereal disease.

The fountain of these diseases must be sought for among the prostitutes, and from the report made with great accuracy by Mr. Kennedy, we find the

Houses of prostitution are	569
Houses of assignation are	90

The whole number of prostitutes, *i. e.*, of women who pursue prostitution as a means of livelihood, and not including those who practice private debauchery, amounts to 2,574.

To speak of prostitution and the diseases resulting from it, and especially, to propose to treat these diseases, and subject the wretched women who pursue this occupation to police and medical surveillance, in hopes of eradicating their diseases, is at first sight revolting, and has always met with opposition, even in those countries which, ultimately, have changed their views upon the subject. Many thoughtful and good men have, in times past, urged upon the authorities the necessity of this control, but no one can revive the subject without wounding the sensibilities of many worthy persons, who believe that to undertake to treat prostitutes, would give encouragement to vice.

Virtue is the result of natural disposition, or arises from education and early training, which makes the moral nature elevated, conscientious and religious, and not the outgrowth of the dangers incurred from debauchery.

Since the moral view is likely to be confronted at every step, it is proper to give to it thoughtful consideration.

If it were proposed to establish prostitution in a place where it had never existed, there would be an united and emphatic protest against such a measure. But since prostitution has always existed in all large communities, and the whippings inflicted in times past upon the diseased of both sexes in entering and on leaving the hospitals, the denunciations of the church, the penalties imposed by the laws, in addition to the dangers of disease and loss of character, have all been powerless to prevent it, what shall be done? Are we to allow the diseases thus generated to go on to destroy the people? If debauched people lead infamous lives, are we to say that they and their companions in vice are suffering the just penalty for their profligacy? that they have offended against the laws of God, and ought to be left to suffer from ruined health, and to give disease to the innocent?

Censure, when carried to cruelty, cannot be attended by any good result. It may make the offender defiant, or fill him with despair, but is not likely to lead to his reformation. Such stern views of duty cannot be held for any length of time; for most of the diseases which inflict mankind arise from some infringement of the laws of God.

When one is prompted to be harsh in his judgment of others, let him reflect how slight a step, in many instances, exists between the evil thought and the evil act; that the circumstances of time and place, early associations, and teachings, or a colder temperament, may have been the only restraints, that have delayed and saved the tempted. Let him also reflect that, if the Creator has affixed penalties to vices, He has, in His wisdom and goodness, furnished us with remedies to treat the diseases which follow from them, and if we are wise and thankful, we shall not hesitate to use them. Physicians who are most familiar with diseases and their origin, and who have fixed and elevated views of the obligations of their profession, are not likely to allow the miserable to suffer, if they have the means of relieving them, and will not allow abstract questions of casuistry to perplex their judgments or to lead them to inquire how the disease was contracted, when the sufferer is appealing to them for help.

The municipal authorities have spent large sums for hospitals, and many thousands of dollars are employed annually for the treatment of venereal diseases, and, as the population of the district grows, so must the hospital accommodations be increased. Whereas, if they had treated these diseases from their origin, and had endeavored to *prevent* them, the results would have been greater, and the pecuniary outlay very much less. They have acted as if they believed that public censure would attach to them if they treated the prostitutes efficiently.

Some of the dispensaries and hospitals, which receive large contributions to their funds from the State and cities, have proposed to charge those effected with syphilis a certain sum for medicines, or in some way make distinction between them and the other patients. The managers, it would seem, relieve their minds by such conduct from all responsibility in the matter, as if a penalty or a fine would make that right which was immoral in itself; as if their narrow notions could impose rules of conduct on the physicians, who would regard them as impertinent, and consequently to be disobeyed. As if the public had no interest in having contagious diseases cured, and would patiently continue their contributions to the support of these institutions, while both guilty and innocent were held up to ignominy, and the peace of families destroyed by the exposure of their illnesses, which such distinctions would cause.

It is time that we had made up our minds on this subject; and, if it is immoral to treat prostitutes with venereal diseases, let us say so at once—let the miserable victims die—and never allude to the subject again. But, if it is right to treat them, let us do so efficiently, and not suffer our minds to be swayed by the ever-recurring questions of conscience, which weaken the will and render the execution feeble. We ought to act in this matter with the good sense and resolution we would use in any other business, and crush it out in its origin, as we did the cholera.

It is the duty of the Board of Health to take cognizance of everything that endangers the health or lives of the people, and, in reply to the Legislature, who have called for information, to say that nothing imperils it more than the prevalence of venereal diseases among all classes. Private individuals may hesitate to volunteer their opinions, but a public body like the Board of Health can properly urge upon the Government of the State the necessity of enactments to give legal authority to measures which are demanded for the eradication of the venereal diseases.

For this purpose we would suggest, first, that it shall be the duty of all hospitals and dispensaries in the Metropolitan Health District, which receive pecuniary aid from the State, cities or counties, to reseive, treat, prescribe for, and dispense medicines to all persons affected with venereal diseases, on the same terms as persons affected with other diseases, without any exceptions, distinctions or charges, founded on the nature of such diseases.

That all keepers of houses of prostitution and assignation shall be registered; so shall all prostitutes who live in these houses; that these registers shall contain their names, ages, nativities, and whether married or not. These registers shall *not* be open to public inspection. The owners of all houses of prostitution and assignation shall be also registered.

In case any woman shall gain admission into a house of prostitution, the fact is to be announced to the police, and the police shall not allow such woman to remain in such house unless she is a registered prostitute.

That the Metropolitan Board of Health shall establish a hospital for prostitutes affected with venereal disease, and shall appoint physicians for the same, the custody of such hospital to devolve upon the police.

That the Board of Health shall cause to be inspected the houses and persons of all prostitutes, and if any prostitute is found diseased with any venereal affection, shall send her immediately to the hospital.

To carry out these measures, and to provide the means for the support of the hostital, also to establish regulations which shall enable the police to compel obedience in case of resistance, must be left to the wisdom of the Legislature.

By subjecting the owners of houses of prostitution to registration, it is believed that it would compel the owners of houses to have regard to the character of their tenants, and prevent the sub-letting of them for infamous purposes. The publicity given to their names would prevent many from renting these houses, who now do so with an eye to profit, because it can be done secretly. Registration would also enable the police to close many houses of assignation, which are the schools in which young women begin a career which ends in prostitution. It would prevent, in a great measure, the meeting of married women in these houses, for they would fear the watchfulness of the police, and dread the public exposure which might follow.

By inscribing upon the registers the names of the keepers of houses of prostitution and of the prostitutes, it is probable that their dependence upon the police would be felt by them, and that they would be induced to behave decently and without public scandal.

The fear of a long detention in the hospital will compel them to confess their maladies early, and thus not continue their vocation until obliged by aggravated disease to stop.

Thieves, and all sorts of malefactors, constantly resort to houses of prostitution, and the women there are often thieves themselves. The registration and supervision of them will tend to make them behave honestly, and deter them from robbing those who visit them. Being personally known to the police, they can be held responsible for their conduct. Drunken men, and young men just escaped from boyhood, are often found infatuated enough to squander their hard-earned wages or their estates upon these women. The increased facility of detection would serve to prevent these crimes.

Registration will enable parents to trace their children, and in some instance to reclaim them; or, in case property is at stake, it will enable those concerned to know whether they are living or dead.

The books which contain the names of the registered housekeepers and prostitutes should never be open for public inspection, because the peace of many respectable families would be destroyed by the secrets contained in them.

By obliging the housekeepers to report the women who demand admission to their houses, it is believed that the debauching of young girls, often mere children, will be prevented. The police could take charge of them, and also of those women who, recently fallen from virtue, and not utterly ruined, in despair rush to these houses to embrace the life of a prostitute. The police could arrest them in their career, give them time to reflect, and the Moral Reform Society and other kindred institutions could interpose their good offices, restore them to their families, or, by gentle words, friendly counsel and protecting care, raise their hopes and lead them to a better life.

The greater freedom from disease, caused by the early medical care given to the prostitutes, might lead the depraved to prefer them to all other women. It may be so, but it would have this good effect, to lessen the demand for the women who frequent the houses of assignation to practice debauchery secretly.

It will be perceived that we have chiefly recommended four measures, which seem to be best calculated to eradicate the venereal diseases. These are—

1st. To oblige all hospitals and dispensaries, which receive pecuniary aid from the public, to treat venereal diseases.

2d. Registration of prostitutes, &c.

3d. Hospitals for prostitutes.

4th. The sanitary inspection of prostitutes. These, or something simple as these, must be at the foundation of the proposed reform. The remarks made are intended to be explanatory of their effects. We know that we have not covered the whole subject of control or medical supervision. This must be the work of the Legislature. Much must be left to persuasion, and to the influence of public sentiment, which, we believe, is earnest in its demand that prostitution shall be restricted and controlled.

JOHN O. STONE, M. D.,
WILLARD PARKER, M. D.,
JAMES CRANE, M. D.,
Sanitary Committee.

"G."

REPORT

UPON THE OPERATIONS OF THE

NEW YORK RENDERING COMPANY,

BY

INSPECTORS MOREAU MORRIS, M. D.,

AND

E. H. JANES, M. D.

E. B. DALTON, M. D., *Sanitary Superintendent:*

SIR—In compliance with your order, we have the honor to report, that several joint inspections, at various times, have been made of the rendering operations now being conducted by the "New York Rendering Company," upon their boats, located at the dock at the foot of Thirty-eighth street, North River.

This dock was set apart by city ordinance for the purpose of depositing butchers' offal from slaughter-houses, and all dead animals found in the city limits. Boats, provided for the purpose, were moored at this dock during the day, upon which these materials were loaded, until night, when they were taken down the bay to Barren Island, and discharged.

In consequence of this daily accumulation, and of the delay in removal, this dock has been for years past a most offensive nuisance.

Accumulations of offal and dead animals, in all stages of decomposition, remained thereon during the entire day, emitting indescribably noxious odors, and impregnating the atmosphere for a great distance. The timbers of the dock were saturated with exudations from this offensive material.

Many kindred obnoxious kinds of business have gradually been located in the neighborhood of this dock, for a distance of several blocks around, until at the present time such an admixture of indescribable odors infects the surrounding atmosphere, that it would require the genius of a specialist to discriminate as to their separate origins.

Tallow and soap-grease rendering, under imperfect methods; immense herds of hogs, yarded, awaiting slaughter; tripe, tongues and pigs' feet, boiling and cleaning; gut-cleaning; distilleries; soap and candle factories; boats receiving manure; all kinds of bones, such as animals' skulls, butchers' scraps, hotel and house-refuse, barrels and wagons full of refuse from public and private markets, as cleanings of fish, rotten eggs, spoiled meats, &c., &c.; all are congregated within a radius of half a mile along the dock, from Thirty-sixth to Fortieth streets, North River.

The New York Rendering Company have located a vessel on each side of the dock, at the foot of Thirty-eighth street, which extends out into the river some two hundred feet. On these vessels, at a great expense, have been fitted up nine sets of apparatus, for the purpose of immediately suppressing the nuisance, and then utilizing the material here deposited. Butchers' offal, dead animals, and market refuse, are the only materials which come under their control.

These accumulations, which exaled by far the most obnoxious odors, from the fact of lying upon the dock during the entire day, exposed to the direct action of the sun's rays while in the most active stage of decomposition, afforded one of the greatest sources of air-poisoning in this locality.

This, we believe, is now being almost entirely obviated, by the improved scientific methods adopted by this company.

Another offensive nuisance, that of depositing refuse bones from slaughter-houses, public and private markets, and the gatherings of bone-pickers, pertains, also, to this dock, over which this company has no control. This is received by other parties, who transport these bones daily to remote points, and with this the Rendering Company have nothing to do.

The business, as conducted by this company, is as follows, viz: The offal, brought to this dock in butchers' carts, is dumped directly into iron tubs, provided for the purpose. These are hoisted over the vessel, and immediately emptied into the tanks, which, as soon as filled, are hermetically closed, so that no further odor escapes therefrom. Thus, the necessity of depositing and leaving this most offensive material upon the dock is entirely obviated.

Steam-heat is now applied, by means of a steam-jacket surrounding the tank. The vapors and noxious gases evolved during the process of rendering are wholly conducted by an iron pipe into a coil of several hundred feet in length, located in a separate furnace, where, becoming superheated, they are brought in contact with the flame of the furnace, and, being united with certain proportions of atmospheric air, which render them combustible, they are entirely consumed.

This fact was thoroughly tested in various ways, by repeated and critical observation, during every stage of the process, from filling to discharging the tanks, both on land and water, at various distances, and immediately over the chimney proper. Flannels were placed over the mouth of the chimney at different stages of the process, for the purpose of absorbing and detecting any odors that might escape. No odor could be detected, but that arising from scorched flannel and burning coal.

Thus, both the nuisance attending the accumulation for twelve hours of this highly offensive material, at this dock, and that which usually pertains to the utilizing or rendering process, are rapidly and effectually suppressed.

Persons who have been familiar with the conditions which have existed heretofore at this dock, express great satisfaction at the improvement.

With regard to the disposal of dead animals, almost the same plan is pursued as with the offal.

One boat is exclusively appropriated for this purpose. Small animals, such as pigs, sheep, goats, dogs, cats and poultry, &c., are at once deposited in the tanks. Horses and cattle are carted directly upon the boat, which is enclosed upon all sides; here they are skinned, quartered, and immediately put into the tanks, which are then closed and undergo precisely the same process as the offal-tanks before described.

The average number of large dead animals daily deposited here is about fourteen, and the time occupied, from depositing a dead horse upon the deck of the boat until it is in the tank out of sight, is about fifteen minutes.

By this plan, another great source of air-poisoning from these accumulations is rapidly removed.

We were informed, by persons who had charge of this dock, that there had been times, formerly, when as many as 200, and over, dead animals had remained there exposed for forty-eight hours before removal. From eight to ten was the daily average but a few weeks since; now none are deposited upon it.

When the contents of these tanks are sufficiently cooked, the steam is shut off, they are allowed to cool down, the greese is taken therefrom, the greaves (or scrap) after being washed, is discharged from the bottom of the tanks, drained, and removed upon sloops lying alongside, and are then transported beyond the city limits, to be again utilized for purposes of fertilization.

Thus, these poisonous, destructive materials are rapidly changed to life-sustaining principles.

Frequent inspections, prolonged, at different times, during all the various stages of this process, on different days, standing over the tanks during their filling, boiling and discharging; examining their construction, various connections, and plan of operations, have satisfied us that, so far as it is possible to suppress this offensive condition of the refuse of this great city, this company is doing it. At the same time it is using every endeavor to comply with any suggestion which has been made through your officers, with reference to minor details connected with the business, such as disinfecting the already saturated dock, by the liberal use of sulphate of iron, frequent washing of the decks, utensils, and things connected with the business, whitewashing woodwork, &c.

During the time of operations, there are two periods when there is an offensive odor which escapes. These are while emptying the contents of the butchers' carts into the tanks, and during the evisceration of the horses and cattle.

This odor is confined to the immediate vicinity of the boats, not being discoverable fifty feet therefrom.

Of one fact we are assured, that from the moment these noxious substances come into the possession of this company, their offensiveness is rapidly and effectually suppressed.

The carting of butchers' offal through our crowded streets, has been, and is still, loudly and justly complained of, as one of those evils connected with the present system of slaughtering throughout the city.

The necessity of tolerating this offence during cartage transportation, demands that its removal should be done as speedily as possible. Now that the business of slaughtering is being rapidly transferred, under your recent orders, near to the shores, on both sides of the city, this transportation through the thickly settled and better parts of the city can be entirely avoided. To that end we would respectfully suggest that the company provide another apparatus, at some point on the East River side, in the vicinity of Forty-fifth street, where the butchers have largely congregated, there to receive all the offal from that side of the city, thus obviating the necessity of carting it across the city to this only place of deposit.

We would, also, respectfully suggest that an order be issued by your Board that all offal from slaughter-houses be delivered at these depots, between the hours of two o'clock A. M. and ten o'clock A. M., every day except Sundays. The reason for such an order being, that, as the slaughtering is mostly done in the afternoon and night, this material could be delivered in the morning, and the business of rendering so systematized, that no accumulation, at either depot, need take place. At the present time a tank must be kept open at all times during the day to receive it, as it is brought straggling along from six o'clock A. M. until seven o'clock P. M., much of it far advanced in decomposition. Several of the proprietors of large slaughtering establishments are willing to comply with this regulation.

Respectfully submitted,

MOREAU MORRIS, M. D.,
E. H. JANES, M. D.,
Sanitary Inspectors, Metropolitan Board of Health.

New York, *September 26th*, 1867.

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